TECHNICAL MANUAL
Undercounter Dishwasher

RL-30

Installation, Operation and Maintenance Instructions

Insinger Machine Company
6245 State Road
Philadelphia, PA 19135-2996

800-344-4802
Fax 215-624-6966
www.insingermachine.com

Insinger®

Thank you for purchasing this quality Insinger product.

On the space provided below please record the model, serial number and start-up date of this unit:

Model:__________________________________

Serial Number:____________________________

Start-Up Date:______________________________

When referring to this equipment please have this information available.

Each piece of equipment at Insinger is carefully tested before shipment for proper operation. If the need for service should arise please contact your local Authorized Insinger Service Company.

A Service Network Listing is provided on our web site, www.insingermachine.com or call Insinger at 800-344-4802 for your local authorized servicer.

For proper activation of the Insinger Limited Warranty a SureFire™ Start-Up & Check-Out Service should be completed on your machine. Refer to the Introduction section in this manual for an explanation of Insinger SureFire™ Start-Up & Check-Out Program.

Please read the Insinger Limited Warranty and all installation and operation instructions carefully before attempting to install or operate your new Insinger product.

To register your machine for warranty by phone, fax or the internet or for answers to question concerning installation, operation, or service contact our Technical Services Department:

TECHNICAL SERVICE CONTACTS	
Toll-Free	800-344-4802
Fax	215-624-6966
e-mail	service@insingermachine.com
Web site	www.insingermachine.com

TABLE OF CONTENTS

Insinger

Project ________________ CSI - 11400 ____________
Item __________________ Approval _______________
Quantity _______________ Date __________________

RL-30

Automatic Undercounter Dishwasher

- Automatic, hot water sanitizing undercounter dishwasher with timed wash and rinse cycle. Fully automatic operation with power on/off button.
- Capacity is 30 racks per hour or 750 dishes per hour.
- .79 gallons per rack final rinse consumption
- Energy efficient
- Only requires a 30 amp circuit
- TempGuard™ final rinse temperature control ensures sanitized ware





Superior cleaning action with 7 bayonet style wash arms with 42 fixed wash jets.

STANDARD FEATURES

- 7 bayonet style wash arms with 42 fixed wash jets
- 6 upper rinse jets
- 8 lower revolving rinse jets
- Fully automatic operation
- Independent wash and rinse systems
- Automatic tank fill
- Continuous wash cycle
- Electric immersion tank heat: 2.8 kW
- Low water protection for heater
- TempGuard™ final rinse temperature control
- Thermostatic controls for the wash tank and final rinse heaters
- Built-in electric booster: 3.5 kW (70 rise)
- Only requires a 30 amp circuit
- Motor overload protection
- Double wall construction for noise reduction and thermal insulation
- Deep drawn side walls, wash tank, door and rack guides for easy cleaning
- Door interlock safety switch
- Flexible water connection
- Single point electrical connection for motor, controls, heater and booster
- Built-in detergent and rinse-aid pumps
- Pumped drain
- Food soil strainer system
- Pressure reduction valve and line strainer
- 2 plastic 20" x 20" racks (1 plate, 1 silver)

OPTIONS

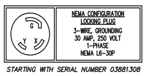
- ☐ Additional plastic 20" x 20" rack
- ☐ Drain quench system
- ☐ 6" stand
- ☐ 17" stand

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Insinger

RL-30

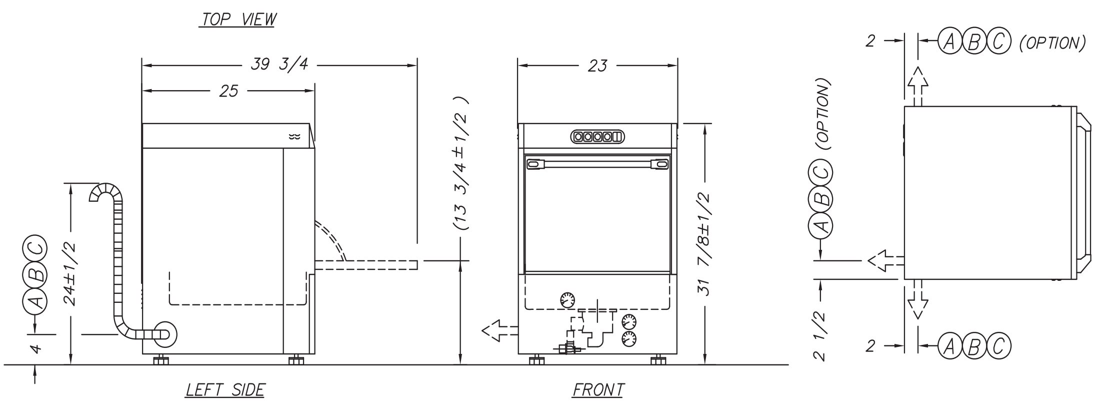
Automatic Undercounter Dishwasher



INSTALLATION CONNECTIONS

LTR	DESCRIPTION	SIZE
A	HOT WATER SUPPLY – 110° F MIN / 140° F MAX.	3/4" FPT x 3.5 FT LG. FLEX HOSE
B	ELECT: 1.0 HP + 4.7 KW, 18 FLA ON 208/1/60 1.0 HP + 5.2 KW, 20 FLA ON 220-240/1/60	10-3C x 8 FT LG SJ CABLE WITH NEMA L6-30P
C	DRAIN CONNECTION (SEE NOTE 2). 24" MAX HEIGHT	3/4" x 4 FT LG. FLEX HOSE

NOTES:
1. CABLE WITTH NEMA L6-30P PLUG IS PROVIDED
2. DRAIN HOSE END HAS 3/4" ID BY 1" DEEP FLEXIBLE RUBBER CUFF.
3. WASH TANK CAPACITY 4.75 GAL.
4. FINAL RINSE CONSUMPTION 0.79 GAL/CYCLE.
5. CLEARANCE BETWEEN RACK AND UPPER WASH/RINSE ARM IS 11-3/4".



Note: For all rough in connections see installation and layout detail drawing.

Capacity Per Hour	30 racks 750 dishes 68 meals
Tank Capacity	7.4 gallons
Motor Size	1hp (wash)
Electric Usage	2.8 kW wash tank 3.5 kW built-in booster (40°-70° rise)
Water Inlet Temperature	110°F to 140°F
Final Rinse Peak Flow at 20 psi min.	4.75 gallons/minute
Final Rinse Consumption at 20 psi min.	23.8 gallons/hour 0.79 gallons/rack
Exhaust Hood Requirement	None
Time Cycle	120 seconds
Peak Rate Drain Flow	9 gallons/minute
Shipping Weight	165 lbs.
Current Draw Amps	Electric with Built-in Booster
208-240/1/60	18-20

SPECIFICATIONS

CONSTRUCTION- Machine wash tank, casing and rinse pipes are made of 304 stainless steel. The polypropylene wash manifold, arms and jets are heat, alkali and rust resistant.

CONTROLS- Front mounted controls are easy to read with indicator lights for power heat and drain. Control components mounted in splash-proof box. Box is on slides for easy service.

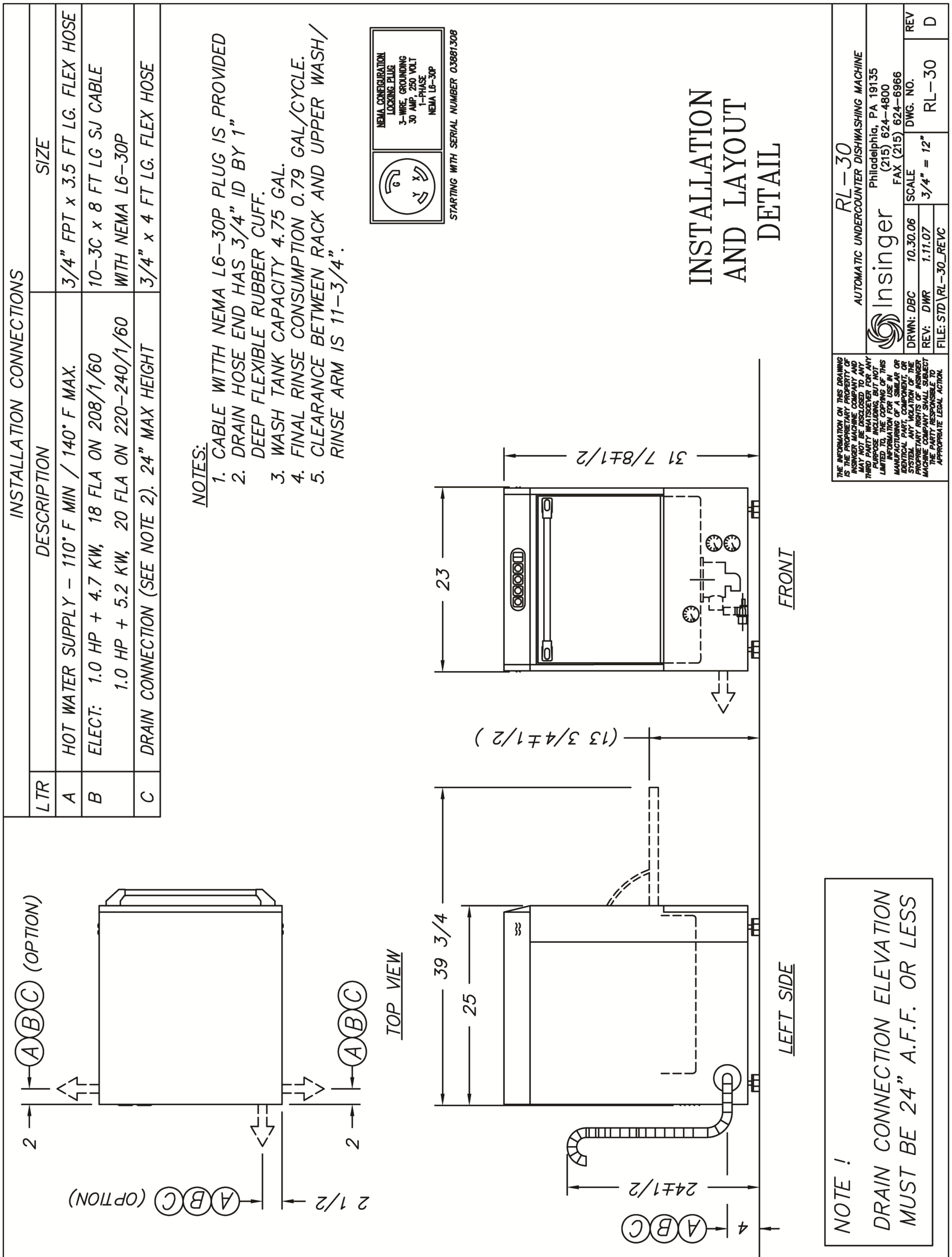
WASH/RINSE SYSTEM- 42 fixed high volume spray nozzles, 14 full coverage rinse nozzles.

DRAIN SYSTEM- Separate drain pump lifts up to 24 inches above floor level.

INTERNAL HEIGHT- 11 1/2 inches.

Note: Due to product improvement we reserve the right to change information and specifications without notice.

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RL-30 UNDERCOUNTER DISHWASHER

INTRODUCTION

Purpose

The purpose of this technical manual is to provide installation, operation, cleaning and maintenance directions.

A section is provided for replacement parts.

Scope

This manual contains all pertinent information to assist in the proper installation, operation, cleaning, maintenance, and parts ordering for the Insinger RL-30 Undercounter dishwasher. The installation instructions are intended for qualified equipment installers. The operation and cleaning instructions are intended for the daily users of the equipment. The maintenance and parts sections are intended for qualified service and/or maintenance technicians. Replacement parts may be ordered directly from our factory or from your local Insinger Authorized Service Agency. **You can speak to the Insinger Technical Services Department, 800-344-4802, or e-mail us at service@insingermachine.com**. When calling for warranty information or replacement parts please provide the model and serial number of your Insinger Equipment. These important numbers should be noted in this manual on the spaces provided on the opening page.

Surefire™ Start-up & Check-out Program

Insinger is proud to offer our exclusive Surefire™ Start-up & Check-out Program to our commercial customers. This service is included in the purchase price of your new Insinger dishwasher. We will provide an authorized factory service technician for the initial start-up of your new Insinger dishwasher to ensure it is running at optimum levels from the very first pass. Please call the factory or your local Insinger Sales Representative to schedule this service.

NSF 3-2003 requirements for detergent and chemical sanitizer dispensers.

This machine must be operated with detergent in the integral detergent dispensing system to insure proper washing.

Intended use

The Insinger RL-30 may only be used for cleaning plates, cups, dishes, cutlery and similar restaurant ware and commercial catering.

Any change in design or use of the dishwasher carried out without the written permission of Insinger, will lead to warranty nullification.

If damage is caused to the dishwasher due to failure to observe the instructions given in this manual, no claims under the warranty agreement can be submitted to Insinger Machine Company.

Safety Instructions

Make sure that you have read and understood the operating instructions before you start to use the dishwasher. The Insinger customer service department can tell you how to operate the washer and how it works.

Definitions

Throughout this guide you will find the following terms: **WARNING, CAUTION, & NOTE**.

WARNING indicates potential physical danger.

CAUTION indicates potential equipment damage.

NOTE indicates helpful operating hints or tips.

You will visually be able to identify each as shown below:

WARNING:
Indicates potential physical danger.

CAUTION:

Indicates potential equipment damage.

NOTE:
Indicates helpful operating hints or tips.

INSINGER MACHINE COMPANY LIMITED WARRANTY

Insinger Machine Company, Inc. (Insinger) hereby warrants to the original retail purchaser of this Insinger Machine Company, Inc. product, that if it is assembled and operated in accordance with the printed instructions accompanying it, then for a period of either 15 months from the date of shipment from Insinger or 1 year (12 months) from the date of installation or start-up that said Insinger product shall be free from defects in material and workmanship. Whichever one of the two aforestated limited warranty time periods is the shortest shall be the applicable limited warranty coverage time period.

Insinger may require reasonable proof of your date of purchase; therefore, you should retain your copy of invoice or shipping document.

This limited warranty shall be limited to the repair or replacement of parts which prove defective under normal use and service and which on examination shall indicate, to Insinger's satisfaction, they are defective. Any part that is claimed to be defective and covered by this limited warranty must be returned to Insinger. An RMA# must be obtained from the Insinger Warranty Department before returning any material. Return may be done through an Authorized Service Agency. Furnish serial number of machine and RMA # with shipment and send to:

Insinger Machine Company
6245 State Road
Philadelphia, PA 19135-2996

If Insinger's inspection confirms the defect and the claim, Insinger will repair or replace such part without charge and return it to you freight or postage prepaid.

This limited warranty does not cover any failure or accident, abuse, misuse, alteration, misapplication, improper installation, fire, flood, acts of God or improper maintenance or service, or failure to perform normal and routine maintenance as set out in the instruction booklet (operating instructions) or for improper operation or failure to follow normal operating instructions (as set out in the instruction booklet). Insinger is not responsible nor liable for any conditions of erosion or corrosion caused by corrosive detergents, acids, lye or other chemicals used in the washing and or cleaning process.

Service must be done by either Insinger Appointed Service Agencies or agencies receiving prior authorization from Insinger.

All warranty work must be done during normal working hours, unless purchaser receives prior authorization from Insinger.

There are no other express warrants except as set forth herein and any applicable implied warranties of merchantability and fitness are limited in duration to the period of coverage of this express written limited warranty. This limited warranty supersedes all other express warranties, implied warranties of merchant-ability and fitness or limited warranties as of this date, January 1, 1998. Some states do not allow limitation on how long an implied warranty lasts so this limitation may not apply to you.

Insinger is not liable for any special, indirect or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation nor exclusion may not apply to you.

Insinger does not authorize any person or company to assume for it any other obligation or liability in connection with the sale, installation, use, removal, return or replacement of its equipment: and no such representations are binding on Insinger.

INSINGER MACHINE COMPANY LIMITED WARRANTY- COMMERCIAL MARINE USE

Insinger Machine Company, Inc. (Insinger) hereby warrants to the original retail purchaser of this Insinger Machine Company, Inc. product, that if it is assembled and operated in accordance with the printed instructions accompanying it (installation manual), then for a period of 15 months from the date of installation on board the vessel, that said Insinger product shall be free from defects in material and workmanship.

Insinger may require reasonable proof of your date of equipment install, therefore, you should retain your copy of invoice or shipping document.

This limited warranty shall be limited to the replacement of parts which prove defective under normal use and service and which on examination shall indicate, to Insinger's satisfaction, they are defective. Any part that is claimed to be defective and covered by this limited warranty must be returned to Insinger. Furnish serial number of machine with shipment and send to:

Insinger Machine Company, Inc.
6245 State Road
Philadelphia, PA 19135-2996

If Insinger's inspection confirms the defect and the claim, Insinger will repair or replace such part without charge and return it to you freight or postage prepaid. If part damages are not covered, Insinger will contact the customer and advise.

If a factory trained authorized technician is required to repair or replace defective parts or material during the 18 month warranty period, the cruise line will be responsible for the payment of travel expense and a minimum of four hours labor.

Labor will be billed to the customer at a reduced rate of $40.00 per hour. If sailing with a vessel is required, then an eight hour per day minimum will apply.

This limited warranty does not cover accident, abuse, misuse, alteration, misapplication, improper installation, fire, flood, or improper maintenance or service, or failure to perform normal and routine maintenance as set out in the instruction booklet (operating instructions) or for improper operation or failure to follow normal operating instructions (as set out in the instruction booklet).

Insinger is not responsible nor liable for any conditions of erosion or corrosion caused by corrosive detergents, acids, lye or other chemicals used in the washing, caring and or cleaning process.

Warranty service must be done by either Insinger Appointed Service Agencies or agencies, customers galley engineers receiving prior authorization from Insinger.

There are no other express warrants except as set forth herein and any applicable implied warranties of merchantability and fitness are limited in duration to the period of coverage of this express written limited warranty. This limited warranty supersedes all other express warranties, implied warranties of merchantability and fitness or limited warranties as the above date.

Insinger does not authorize any person or company locally or overseas to assume for it any other obligation or liability in connection with the sale, installation, use, removal, return or replacement of its equipment; and no such representations are binding on Insinger.

INSTALLATION AND CONNECTION

WARNING:
Installation and connection of the washer to the customer's water inlet, waste water drainage and electric connections are to be carried out in accordance with national and local criteria by qualified engineers.

Check for Completeness:

After unpacking the machine, first check the delivery against the packing slip to ensure that it is complete, and inspect for damage that may have occurred during transportation. Immediately report any damage to the carrier, the insurance company and the manufacturer.

Setting Up and Alignment:

When setting up the machine, remember that the machine gives off steam during operation (when you open the door). Protect adjacent wooden furniture to prevent it absorbing moisture and swelling.

CAUTION:

Protect the washer against frost. Systems that carry water can be damaged if they freeze.

The machine must be completely level when installed. Adjust the machine's feet to compensate for any unevenness of the floor.

CAUTION:

Note all the information on the enclosed connection diagram. For the machine to work correctly, the required water pressure and flow rate must be guaranteed at all times.

Connection to the Water Supply:

- Use a ball valve and a pressure reducing valve for the water supply and drain near the washer and in an easily accessible position. It should not be located behind the washer.
- PRV should be set to supply 20 psi flow pressure.
- The washer is equipped with a drain pump. The maximum drain pump lift above floor is 24”.

Connection to the Water Supply (continued)

- Connection should provide for a minimum of 24” (600mm) of flexible line at machine so that unit can be moved for cleaning. Note: Unit is provided with 37” (940mm) flexible connections.

Connection to the Drain:

Unit must be connected to drain capable of handling 4.75 gal/min flow and must be provided with a proper air gap at connection. Failure to provide air gap will result in improper or inconsistent draining of unit and potential overflow condition. The maximum height of the drain connection is 24”.

Connection to the Power Supply:

Before using the washer, check that all electrical protection systems are working correctly.

Attention: The machine should not be regarded as isolated from the power supply unless switched off at the customer's main switch.

- The total amp load is 20 fla.
- The electrical connection of the washer is to be fused by the customer with time-lag fuses or circuit breaker according to wattage (see the machine rating plate). No other appliances may be fused with the washer.
- Install according to local regulations, this unit requires a 30 amp circuit breaker in the electric supply.
- Connect the power cord to the customers power system, make sure the unit is properly grounded. Unit comes equipped with a NEMA L6-30P plug.
- The power cord comes attached from the factory, if replacement is needed it must be done by certified personnel only.

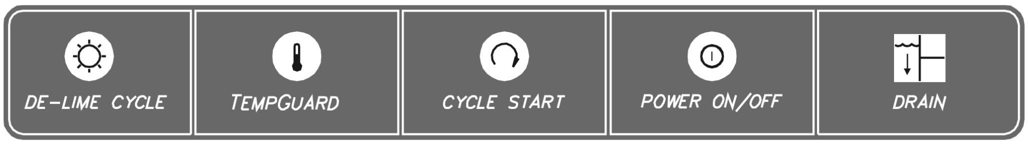
Final Tasks:

The washer must be connected to all services (electricity supply and to the fresh water and waste water systems), prior to testing the machine & installation. Make sure incoming water line is flushed of debris before connecting to unit.

OPERATING INSTRUCTIONS

Turn on the main power, S1. The machine will fill. the booster tank fills and continues until the wash tank of the machine is full.* Once the wash tank is full the booster tank heater (R1) is turned “on”. Once the booster has reached operating temperature 185°F (85°C) (set by B1) the wash tank heater (R2) is activated until optimal wash temperature 158°F (70°C) (set by B2) is reached.

At any point during the heating cycle of the booster and/or the wash tank, a cycle may be started by pressing the cycle switch (S4). If final rinse temperature has been achieved the unit will run a normal 2 minute cycle and stop. If final rinse temperature has not been achieved the unit will stay in wash mode until the final rinse reaches preset temperature (TempGuard™ feature). TempGuard™ is adjustable by B7, TempGuard™ thermostat.



*The water level in the wash tank should be within a 1/2” from the top of the overflow drain pipe.

Initial Start-Up	
Power switch on (Green button)	S1
Power light illuminates	H1
Rinse solenoid opens	Y1 (Only if door is closed)
Rinse booster fills	
Wash tank fills until pressure switch is closed	B3
Rinse tank heater turned “ON”	R1
Rinse temperature reached	B1
TempGuard™ light turns “ON”	H5
Wash tank heater is turned “ON”	R2
Wash temperature reached	B2

Continuing Operation	
Depress “Cycle Start” switch	S3
Cycle light illuminates	H2
Cam timer starts	D1
Rinse shot (~2 sec)	D1 cam 3 (initiates solenoid Y1)
Wash cycle (~101 sec)	D1 cam 2 (initiates solenoid KM3)
Dwell (~3 sec)	
Rinse Cycle (~11 sec)	D1 cam 3 (initiates solenoid Y1)
Drain cycle (0-1 min)	D1 cam 3 (initiates timer KA5)
Dwell (~3 sec)	
Cam timer stops	

CAUTION:

Do not place anything on the open door.

NOTE:
The booster heat and wash heat thermostat are located behind the front kick panel.

Booster B1
Wash B2
Turn clockwise to increase set temperature.
TempGuard™ B7

WARNING:
Do not open the door while the program is running. There is a risk of hot water spraying out of the machine.

(The unit is equipped with a door safety switch, located behind the door.)

OPERATING INSTRUCTIONS

Draining:

Draining	
Pre-set timer KA5 Drain Timer preset ot 30 seconds	
Draining the tank	
Turn machine off	S1
Open door	
Remove overflow standpipe	
Press drain button **Note**: If the tank does not drain completely, press again.	S2

NOTE:
Rinse heater (R1) and wash heater (R2) are never on at the same time. To override the "TempGuard™" feature activate relay KA2 by rotating the orange lever. Located on relay.

Adding Rinse Aid and Detergent:

CAUTION:

Only use detergent and rinse aid which are suitable for commercial washers, a non-foaming industrial alkaline detergent.

Do not use any soap intended for a residential dishwasher. This leads to large amounts of foam building up in the washer and will void your manufacturer's warranty.

CAUTION:

Detergents for commercial dishwashers cause corrosion. Always follow the instructions on the packaging and drums.

CAUTION:

Do not mix different detergent products, this could cause the dosing pump to break down due to crystallization.

OPERATING INSTRUCTIONS

Chemical Connections:

The RL-30 is supplied with integral detergent and rinse additive pumps and the chemical hoses are located on the side of the dishmachine.

This machine must be operated with an automatic detergent feeder and, if applicable, an automatic chemical sanitizer feeder, including a visual means to verify that detergents and sanitizers are delivered or a visual or audible alarm to signal if detergents and sanitizers are not available for delivery to the respective washing and sanitizing systems. Please see instructions for electrical and plumbing connections located in this manual and in the feeder equipment manual.

Detergent concentration should be between .25% (.30oz/gal) and .30% (.38oz/gal). Note: Always consult chemical manufacturer for proper concentration.

Preparing for operation:

- Locate the clear chemical pick up tubes on the side of the unit
- Identify the detergent pick up tube (smaller diameter ID tube) and place it in the container of commercial liquid detergent.
- Place the rinse additive pick up tube (larger diameter ID tube) in the container of commercial liquid rinse additive.

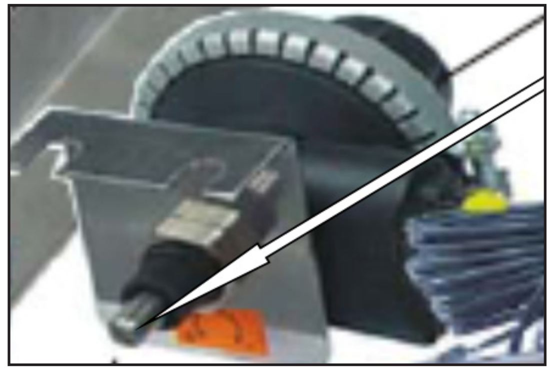
Priming the system:

- The detergent pump is self priming and runs during the rinse/fill cycle. The amount of detergent dispensed is controlled by the speed of the peristaltic pump. This can be adjusted by turning the control screw under the pump head.



Control screw under the pump head

- The rinse additive pump is located behind the front kick panel. The pump is a diaphragm type pump and can be primed by inserting a screwdriver into the screw on the front/top of the pump, turning counter clockwise and then depressing the screw to begin the manual priming. Make several compressions until you see the rinse additive solution entering the check valve on the other side of the pump. The amount of rinse additive that is added to the system can be adjusted by turning the screw clockwise to decrease and counterclockwise to increase. Once set, the solution is then added automatically to the rinse system.



Rinse pump adjusting screw and prime

Rinse Pump

CLEANING/GENERAL MAINTENANCE

Daily Cleaning:

At the end of each day drain the machine

- Turn machine off S1
- Open door
- Remove overflow stand pipe
- Press drain button S2 (drain pump runs for preset time). If tank does not drain completely press S2 again.
- Remove upper and lower plastic wash arms and flush clean with fresh water.
- Remove cylindrical scrap filter & rinse with fresh water until any debris is removed.
- With a clean dry cloth wipe out the inside chamber of the dishmachine.
- Reinsert the O flow, scrap filter and wash pipes.
- Clean the outside of the machine with a high grade stainless steel cleaner.
- Open door slightly to vent. This will allow the interior to dry.

If unit is not sealed to the floor, pull unit from installed position to clean floor under unit. Use suitable chemicals and frequency as conditions require.

The outside surfaces of the unit should be cleaned using a soft cloth and a cleaner designed for use on stainless steel. Note: using cleaners that contain chlorine will harm the surface of stainless steel.

WARNING:
Do not spray outside of dishwasher with a hose or high pressure steam cleaner.

De-liming:

Machines that are operated in hard water areas and are not connected to an external water treatment system must be de-limed from time to time. There are de-liming agents specially designed for commercial dishwashers available for this purpose, please consult your detergent supplier.

WARNING:
The RL-30 must be kept free of lime for proper operation. Lime will interfere with normal function.

Initial Start-Up	
Add de-liming solution into the wash water	
Depress “De-lime” cycle button	S4
De-lime light illuminates	H6
Wash pump starts	M1
Continues “De-lime” cycle until button is turned “OFF”	S4

CAUTION:

De-liming agents for commercial dishwashers cause corrosion. Always follow the instructions for use and safety instructions on the packaging and drums.

TROUBLESHOOTING

Faults where it is not necessary to call Insinger.

You can rectify minor faults yourself following the steps described in the table below. If you are unable to rectify the fault, contact Insinger service at 1-800-344-4802.

Do not open any panels or expose any parts of the machine if tools are necessary to do so. Risk of electric shock.

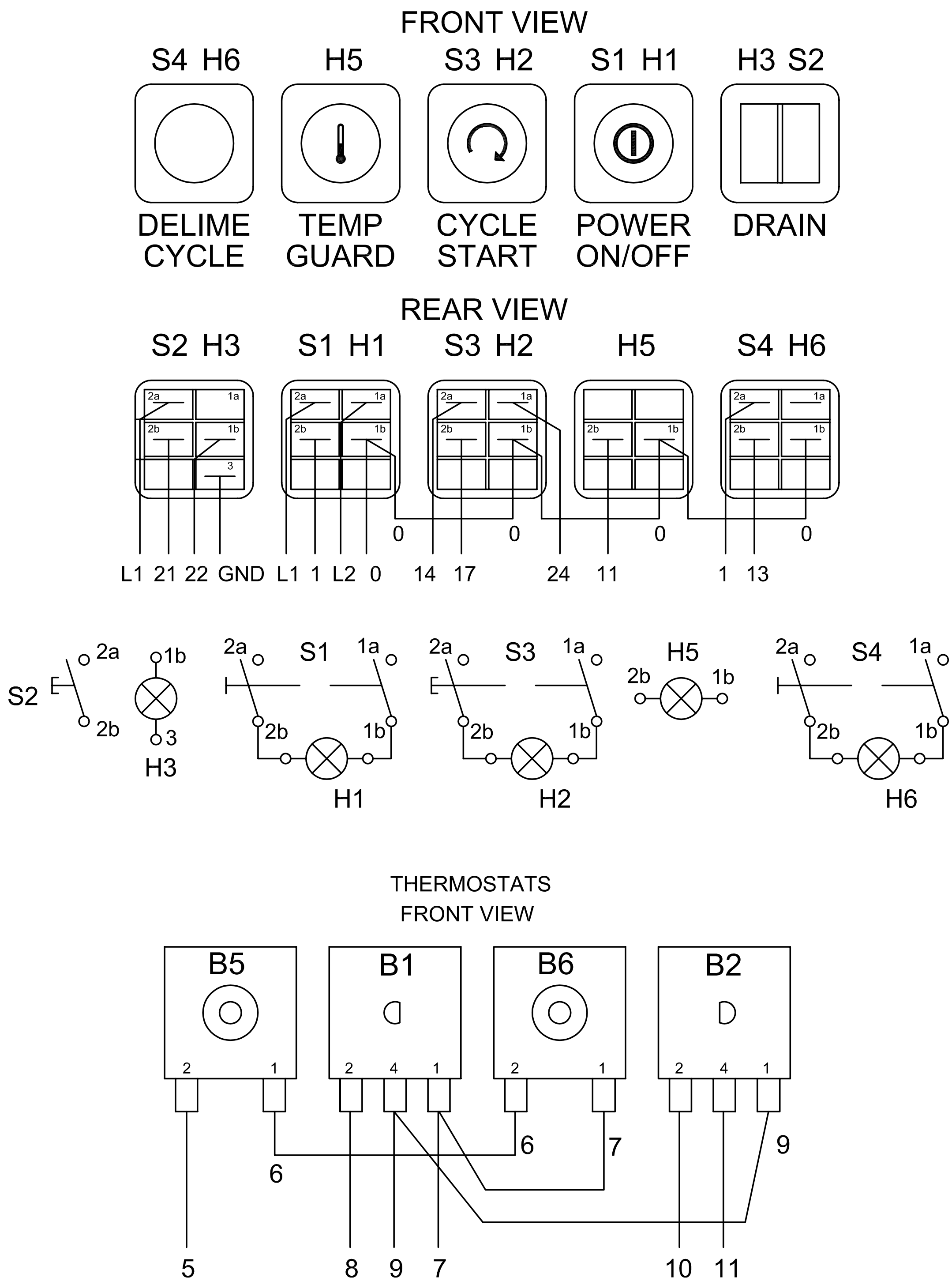
Work on the electrical equipment should only be performed by service personnel. First disconnect the washer from the main power switch. Do not switch the washer on again until the cause of the fault has been identified.

WARNING:
Turn off the main switch on the dishwasher so it is isolated from the power supply.

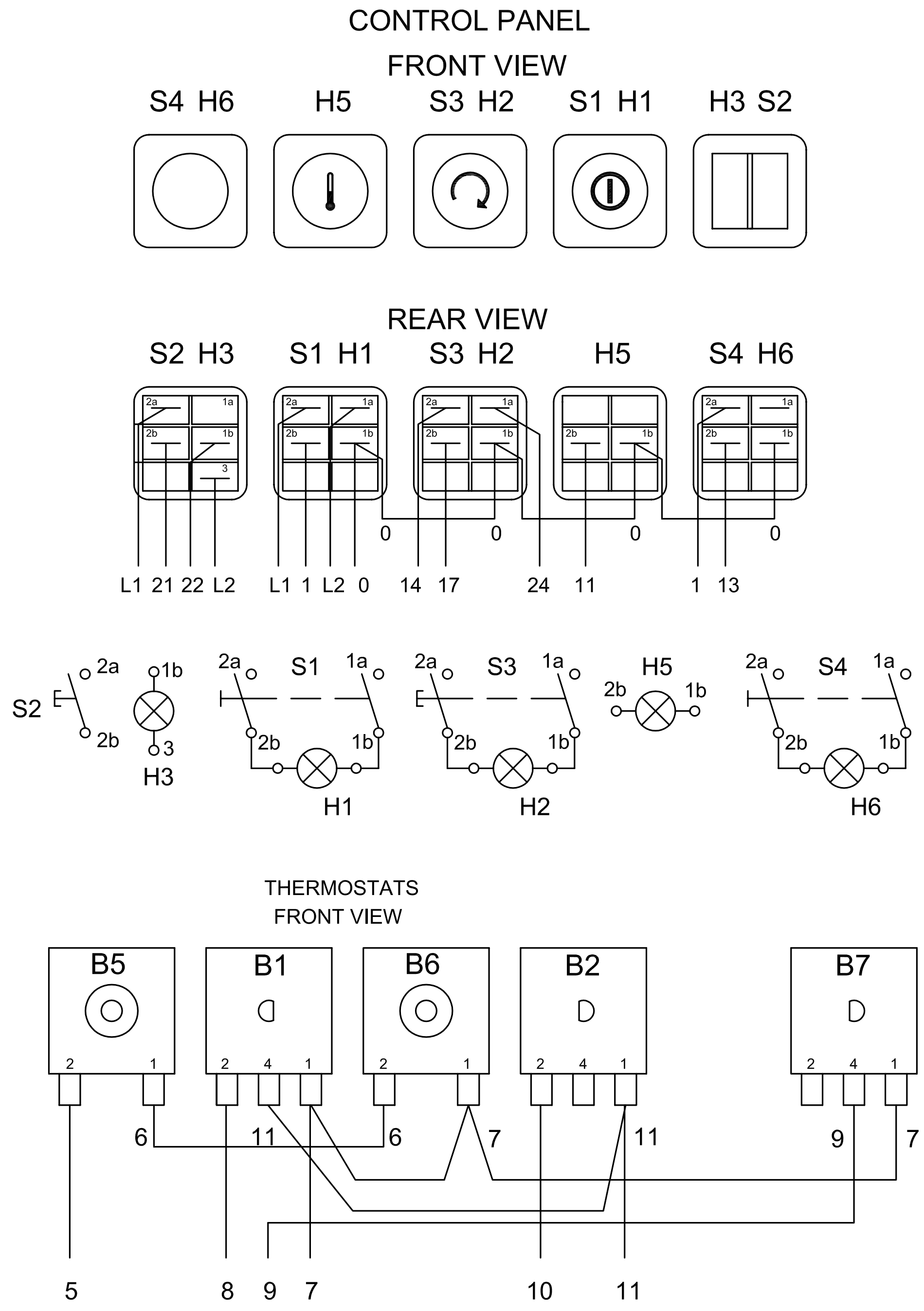
Problem	A	B	C	D
Machine continues to fill	There is no soil blocking the pressure switch opening in tub	Connections to pressure switch are air tight and secure	The pressure switch is operating	Verify solenoid valve is operating properly
Machine fails to fill	Water supply to unit is on	Solenoid valve is operating properly		
Wash termperature incorrect	Verify door is closed	Verify door switch is functioning properly	Adjust thermostat B2	Verify thermostat is working
Rinse temperature incorrect	Adjust thermostat B1	Verify thermostat is working	Verify contactor is functioning properly	Verify heater is working properly
Machine continues to wash	Verify that the “de-lime” switch is not depressed	Verify that the rinse temperature has reached its set limit	Check B7 set point	Verify cam timer is working properly
Machine will not drain	Verify proper settings on drain delay timer (KA5)	Verify drain pump is functioning properly	Remove overflow tube	
Machine will not start	Hold start switch for 1 second	Verify S1 of cam timer is closed	Verify S2 of cam timer is closed	Verify contactor KM3 is energized

For Units Before Serial Number 779.172

CONTROL PANEL

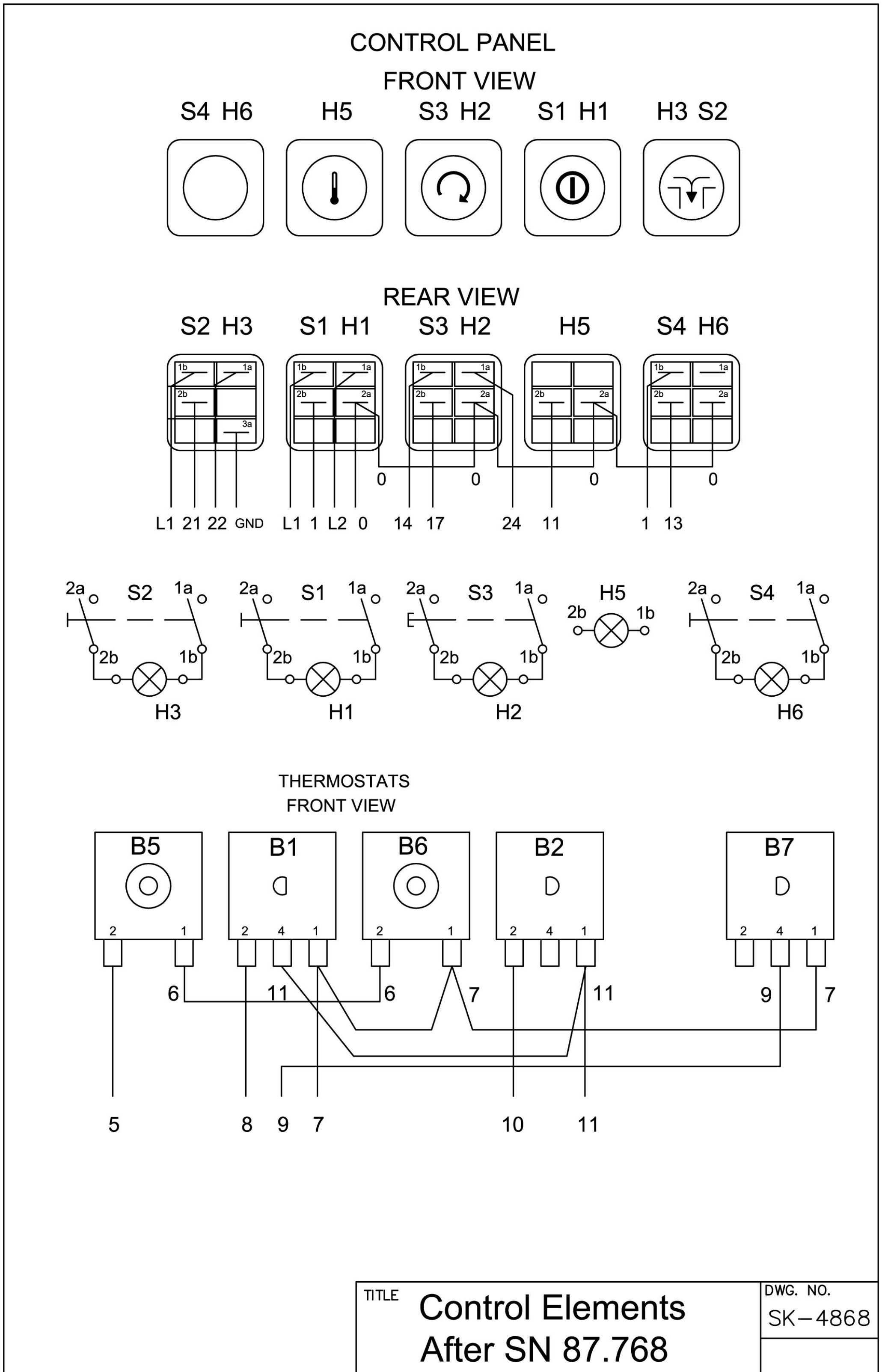


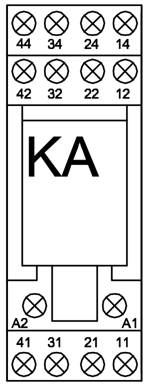
CONTROL ELEMENTS 1 RL-30	SK-4844
Insinger Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE DBC 10.12.06

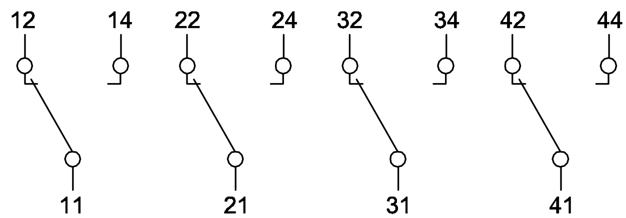


TITLE	Control Elements After SN 779.172	DWG. NO. SK-4868
Insinger	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE JAS 5.26.07

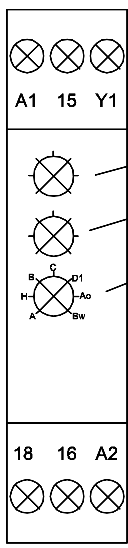
10 CONTROL PANEL RL-30







KA1,KA2 RELAY 4 NANC 6 A 250 V.
KA3,KA4 RELAY 2 NANC 12 A 250 V.

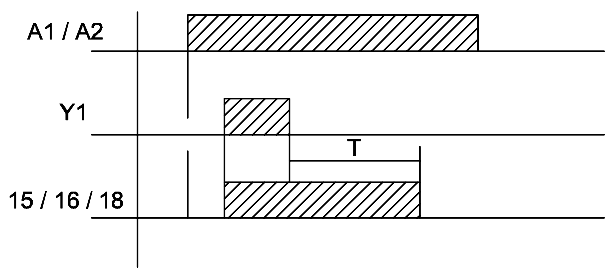


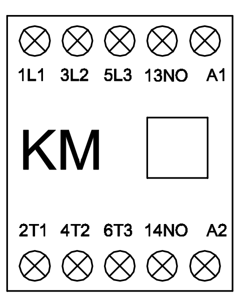
KA5 DRAIN PUMP TIMER.

.1 to 1 MIN (REGULATE APPOX. 30 SECONDS)

POSITION 1

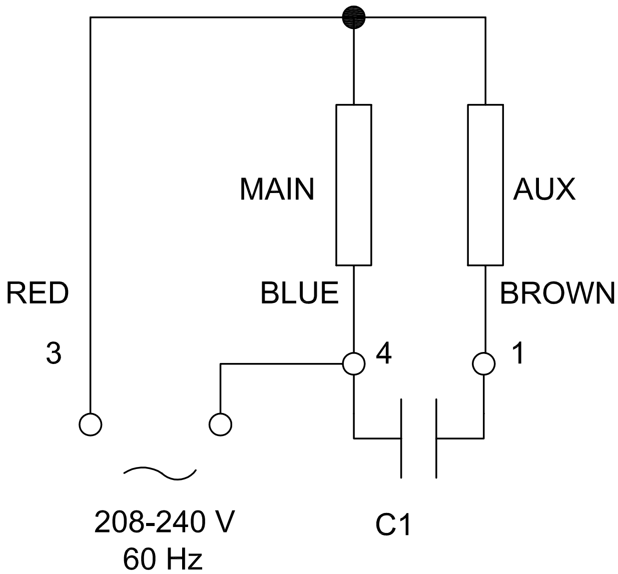
C POSITION

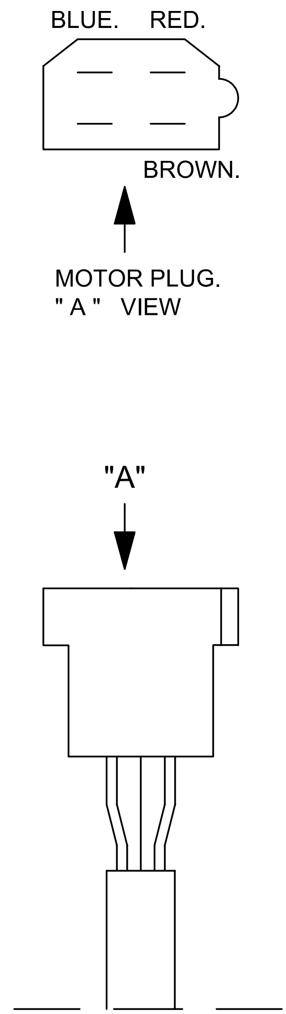




KM1 TO KM4 CONTACTORS.
Ith: 20 Amp.
Ui: 690 V.

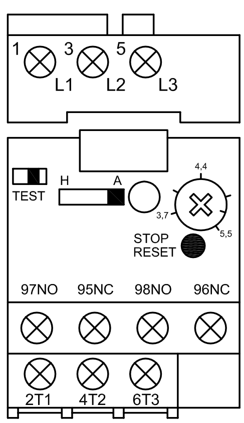
CONTROL ELEMENTS 2 RL-30	SK-4845
Insinger — Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE DBC 10.12.06



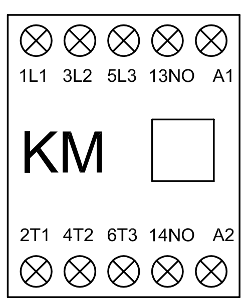


MOTOR PUMP INTERNAL WIRING.

See SK-4987 for unit wiring



K1 THERMAL RELAY.
LR2 K0314
5,5 - 8 Amp

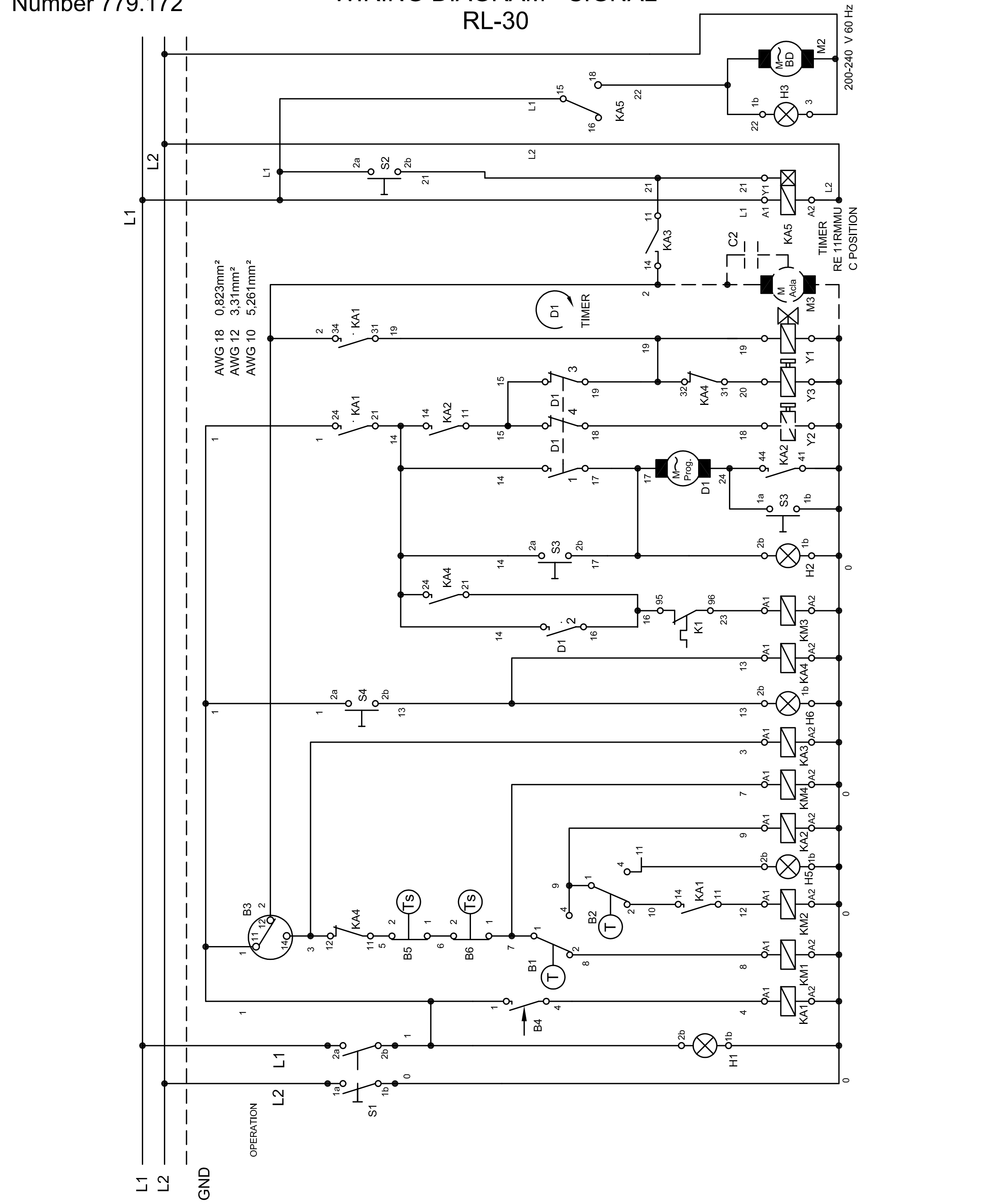


KM1 TO KM4 CONTACTORS.
Ith: 20 Amp.
Ui: 690 V.

CONTROL ELEMENTS 3 RL-30		SK-4846
Insinger	Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE DBC 10.12.06

For Units Before Serial Number 779.172

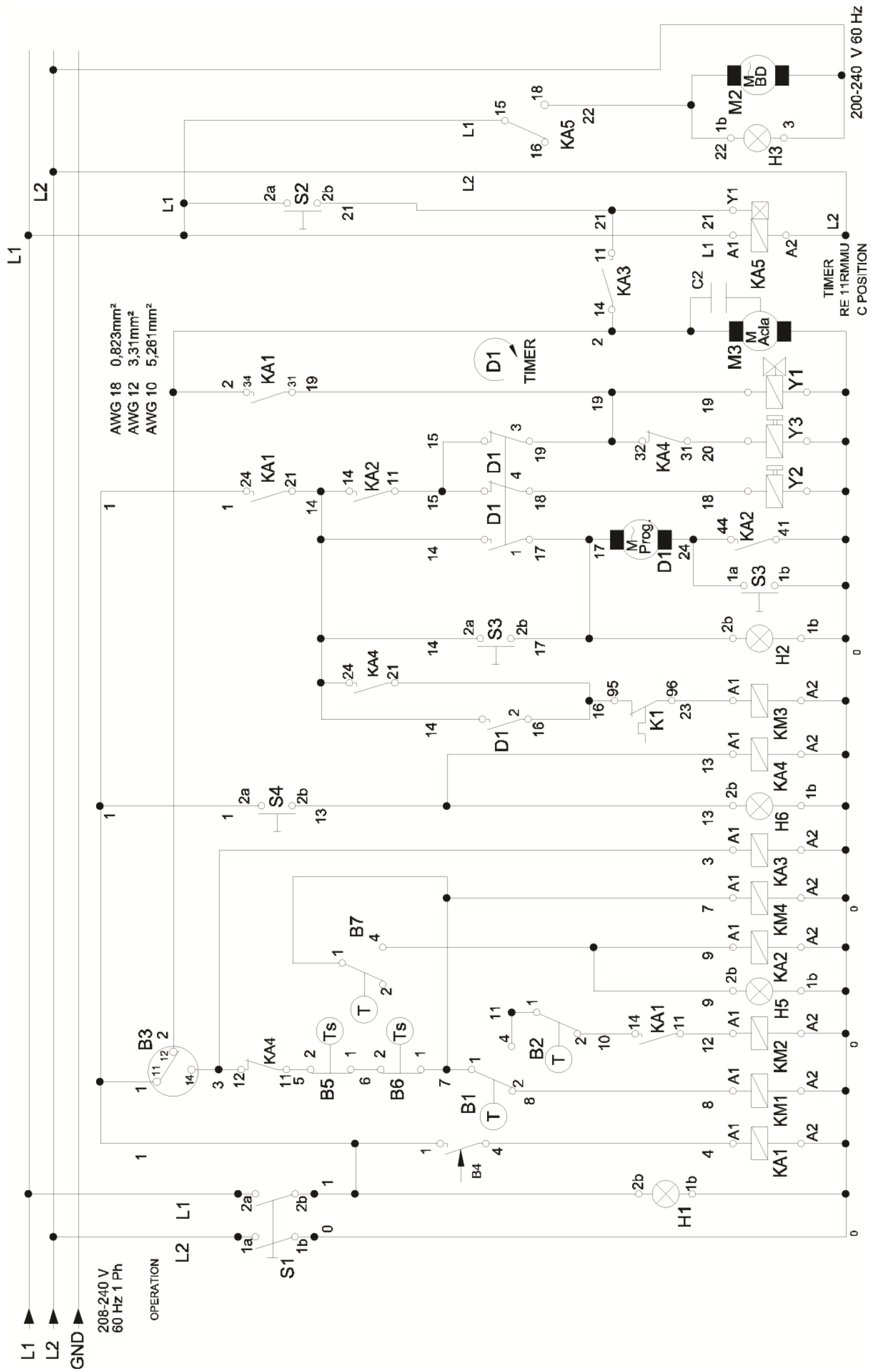
WIRING DIAGRAM - SIGNAL
RL-30



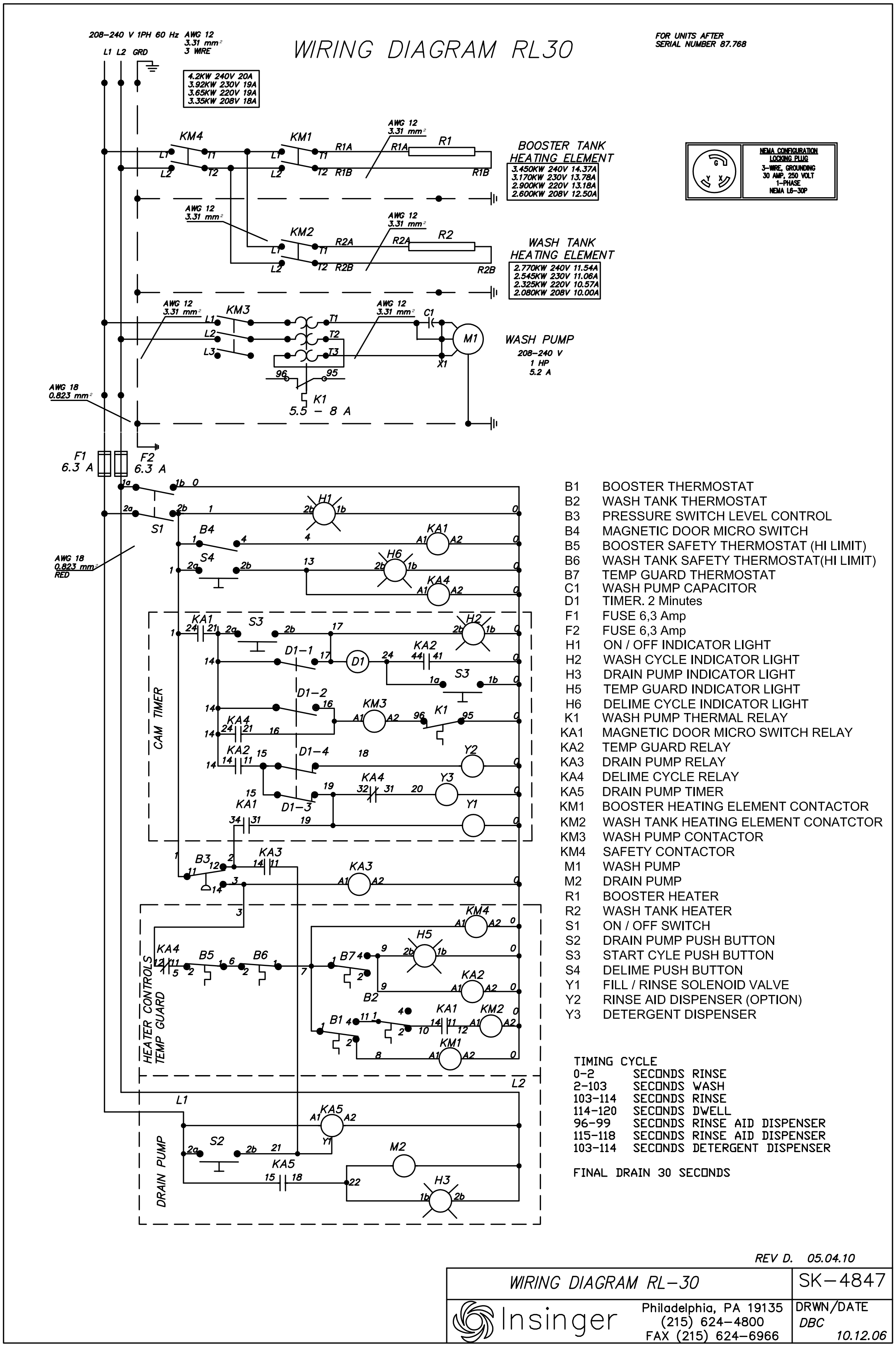
AWG 12
3,31mm²
3 wires

WIRING DIAG., HEATERS & PUMP RL-30	SK-4847
Insinger Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE DBC 10.12.06

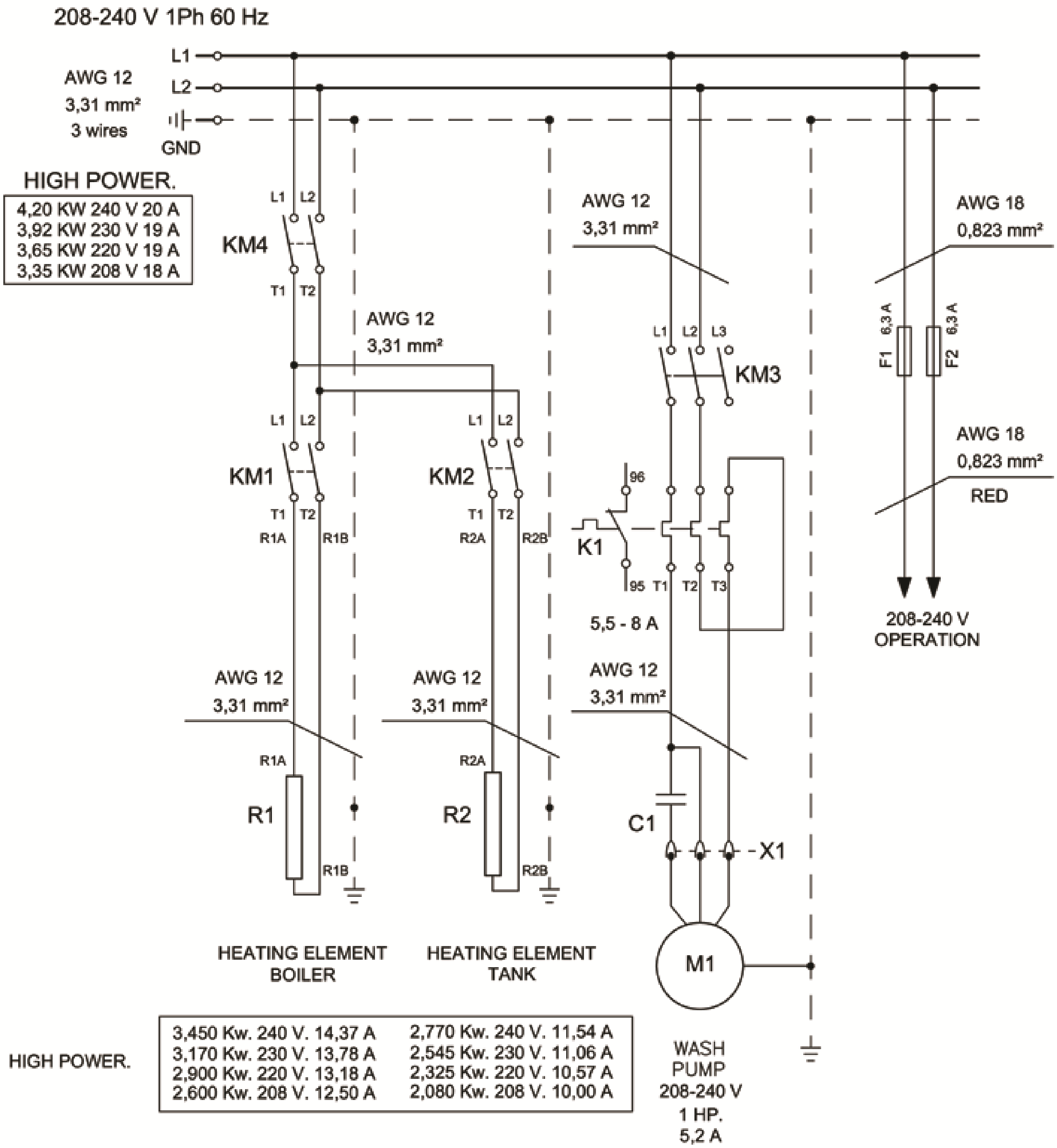
For Units After Serial Number 779.172



For Units After Serial Number 87.768

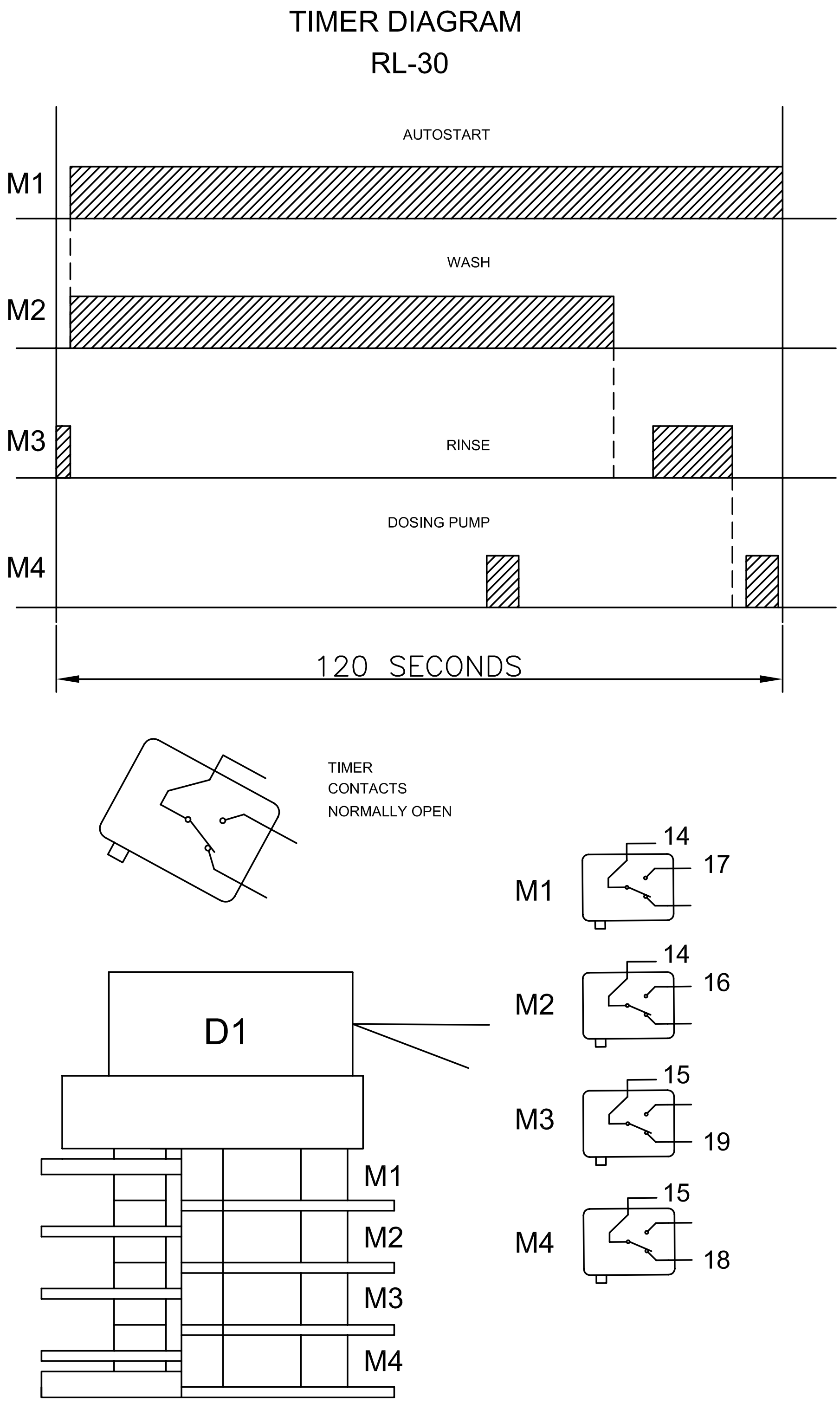


WIRING DIAGRAM
HEATERS AND PUMP.



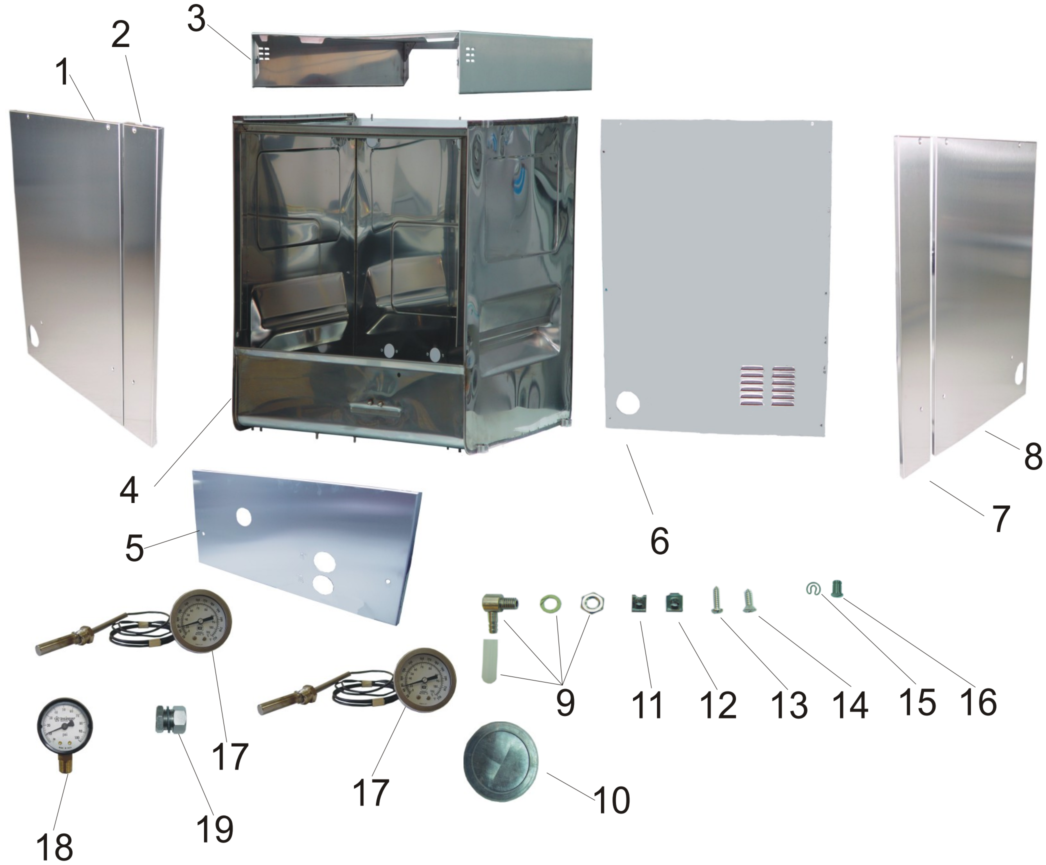
Wiring Diagram Index RL-30

B1	BOILER THERMOSTAT
B2	TANK THERMOSTAT
B3	PRESSURE SWITCH LEVEL CONTROL.
B4	MAGNETIC DOOR MICRO SWITCH.
B5	BOOSTER SAFETY THERMOSTAT.
B6	TANK SAFETY THERMOSTAT.
B7	TEMP-GUARD THERMOSTAT
C1	WASH PUMP CONDENSER.
D1	TIMER. 2 Minutes.
F1	FUSE 6,3 Amp.
F2	FUSE 6,3 Amp.
H1	ON / OFF INDICATOR LIGHT.
H2	WASH CYCLE INDICATOR LIGHT.
H3	DRAIN PUMP INDICATOR LIGHT.
H5	TEMPERATURES OK! INDICATOR LIGHT.
H6	DELIME CYCLE INDICATOR LIGHT.
K1	WASH PUMP THERMAL RELAY.
KA1	MAGNETIC DOOR MICRO SWITCH RELAY.
KA2	TEMP-GUARD RELAY
KA3	DRAIN PUMP RELAY.
KA4	DELIME CYCLE RELAY.
KA5	DRAIN PUMP TIMER.
KM1	BOILER HEATING ELEMENT CONTACTOR.
KM2	TANK HEATING ELEMENT CONATCTOR.
KM3	WASH PUMP CONTACTOR.
KM4	SAFETY CONTACTOR.
M1	WASH PUMP.
M2	DRAIN PUMP.
M3	BOOSTER PUMP (OPTION)
R1	BOILER HEATER.
R2	TANK HEATER.
S1	ON / OFF SWITCH.
S2	DRAIN PUMP PUSH BUTTON.
S3	START CYLE PUSH BUTTON.
S4	DELIME PUSH BUTTON.
Y1	FILL / RINSE SOLENOID VALVE.
Y2	RINSE AID DISPENSER (OPTION)
Y3	DETERGENT DISPENSER.



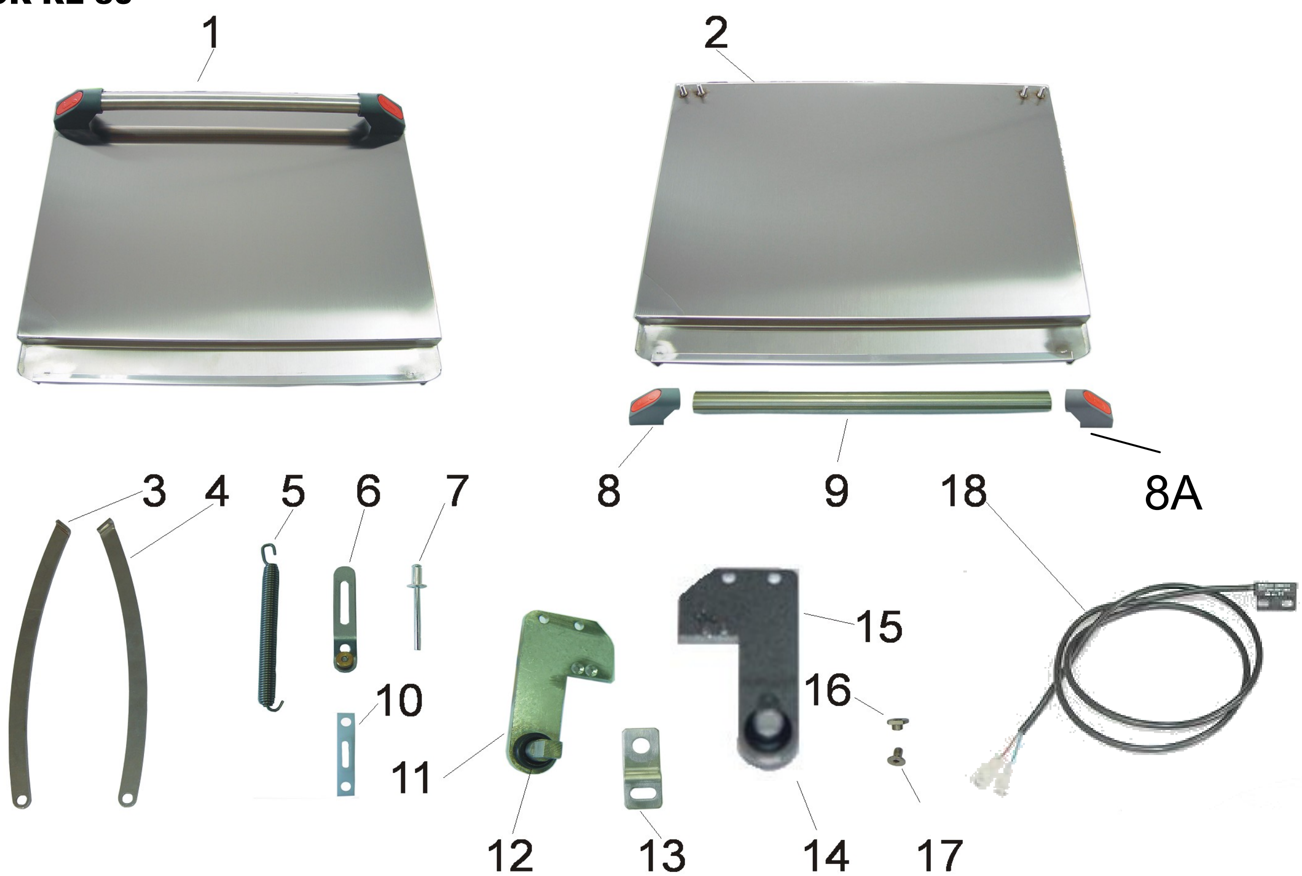
E-TIMER RL-30	SK-4850
Insinger Philadelphia, PA 19135 (215) 624-4800 FAX (215) 624-6966	DRWN/DATE DBC 10.12.06

01 PANELS AND CONTAINER



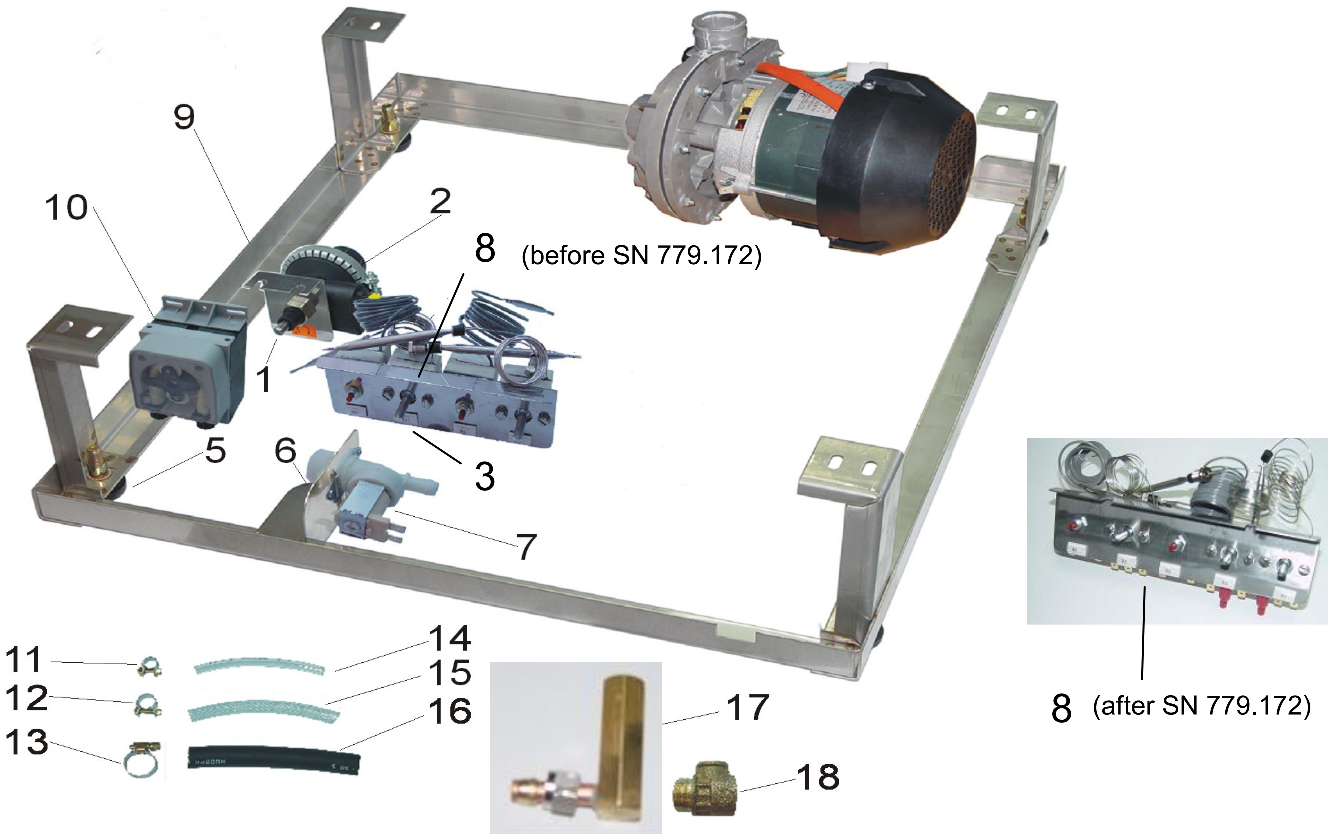
Pos.	Designation	Part no.
1	Big left panel RL-30	RL0516222
2	Strait left panel RL-30	RL0516224
3	Cover plate RL-30	RL0503121
4	Housing RL-30	RL0501120
5	Front panel RL-30	RL0504122
6	Rear panel RL-30	RL0508122
7	Strait right panel RL-30	RL0516225
8	Big right panel RL-30	RL0516223
9	Nipple detergent	RL0845120
10	Side cable pass RL-30	RL2530100
11	Control panel fixing nut TR-1812-13	RL1536006
12	Fixing nut TR-522-2C	RL1536009
13	Stainless steel screw 2,9 x 16 * DIN7971	RL1515022
14	Stainless steel screw 4,2x16 * DIN 7983	RL1515069
15	Anular washer 8 m/m	RL1599006
16	Threaded cap	RL1522200
17	Thermometer 0 – 105 °C / 20 - 220 °F	RL2028018
18	Pressure gauge 0 – 100 PSI	RL1026118
19	Tank thermometer fitting	RL0834118

02 DOOR RL-30



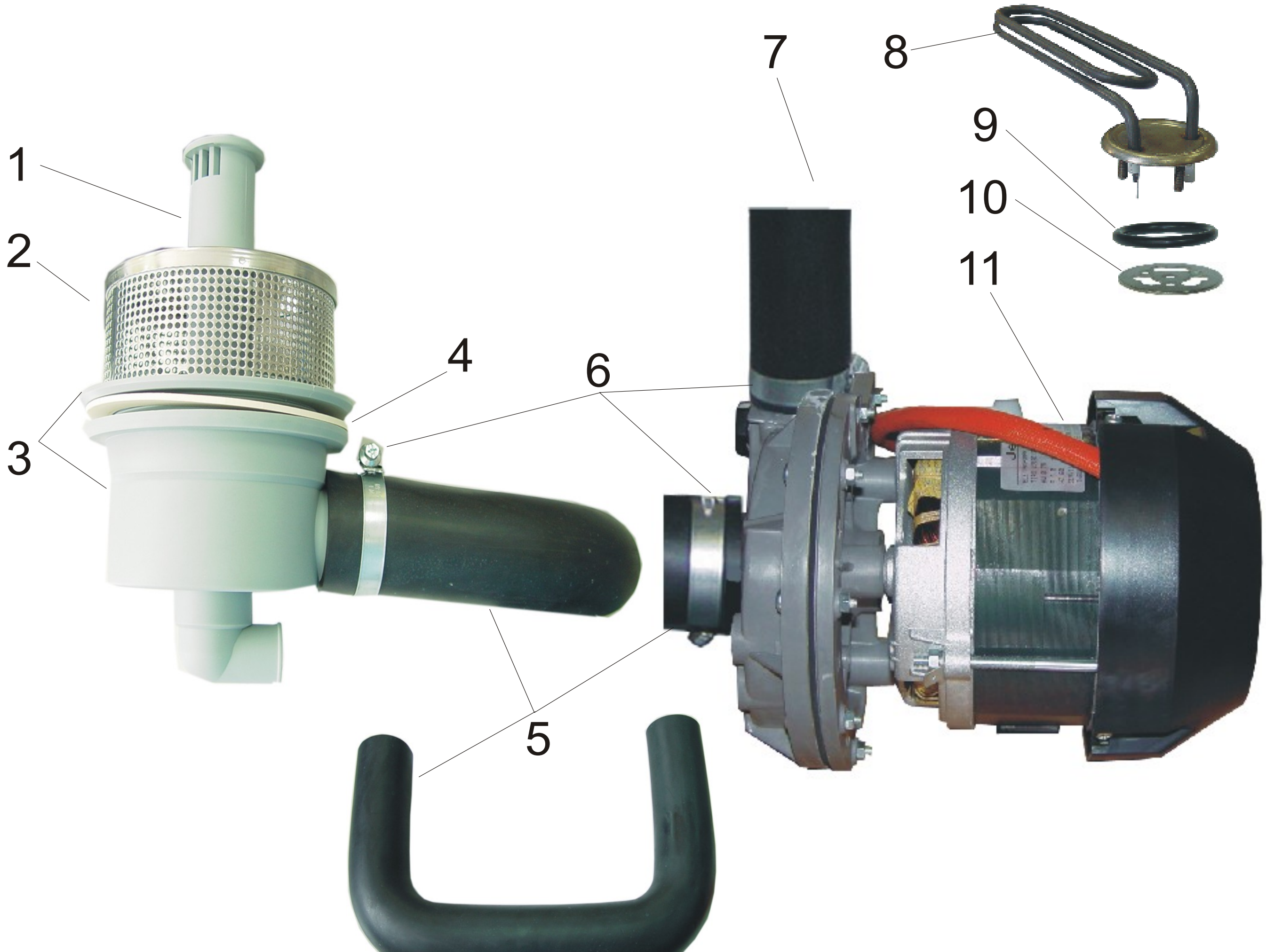
Pos.	Designation	Part no.
1	Complete door RL-30	RL8005119
2	Door RL-30	RL0507119
3	Left door brace	RL0849119
4	Right door brace	RL0849120
5	Door spring	RL2521120
6	Door spring tensor	RL0844119
7	Rivet for micro switch	RL1544003
8	Handle support	RL4080020
8A	Handle support (right)	RL4080023
9	Door andel (left)	RL0510119
10	Door brace guide	RL4038019
11	Left door hinge	RL0805119
12	O ring 7x3x13	RL2514010
13	Hinge support	RL5519120
14	Right door hinge	RL0805120
15	Magnet	RL2019120
16	Hexagonal nut	RL1521219
17	Screw	RL1515619
18	Door magnetic micro switch	RL2019122

03 BASED WASH ZONE



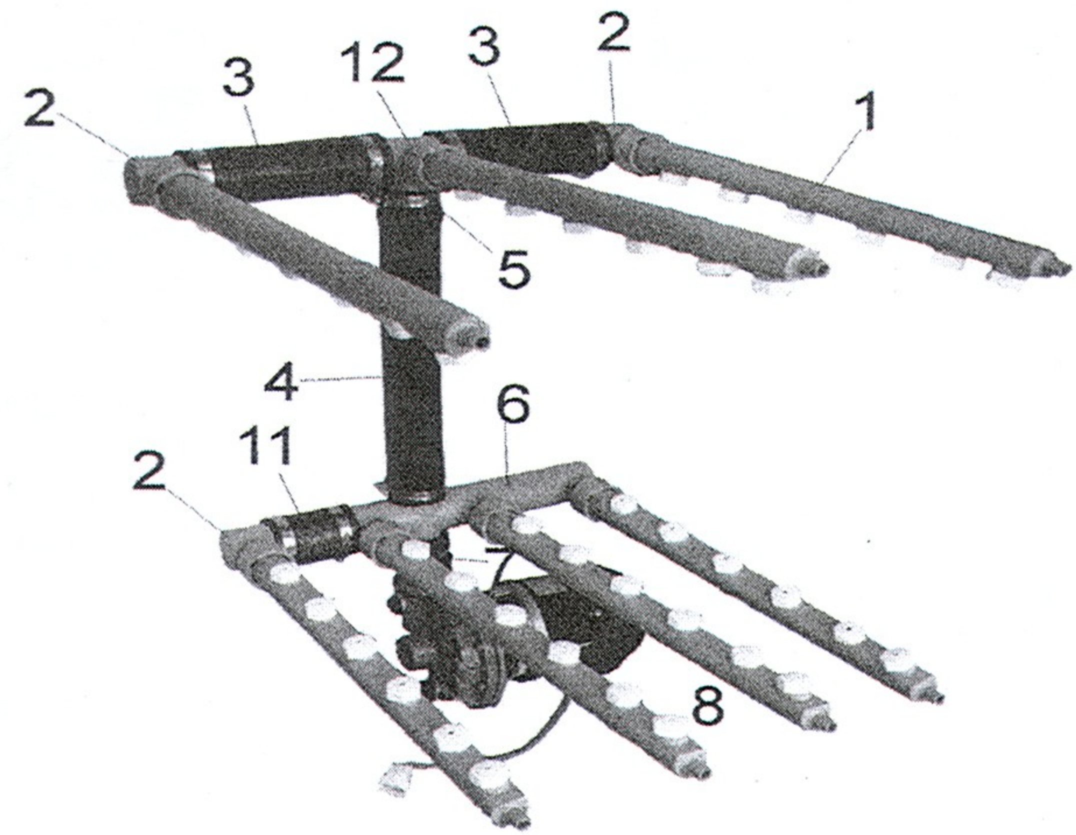
Pos.	Designation	Part no.
1	Rinse liquid dispenser support	RL5543119
2	Rinse liquid dispenser	RL2031101
3	Safety thermostat 140ºC.	RL2006062
4	Thermostat 93ºC.	RL2006053
5	Feet	RL4027102
6	Solenoid valve support	RL5543120
7	Solenoid valve 220/240V. a 50 – 60 Hz.	RL2017006
8	Thermostat support (prior to SN 779.172)	RL0843118
8	Thermostat support (after to SN 779.172)	RL5543117
9	Frame	RL0506130
10	Detergent Dispenser	RL2031080
11	Hose clip 9,5-10	D3196
12	Hose clip 12-13	D3197
13	Hose clip 12-22	D3198
14	PVC 6x9 length 800 mm.(detergent)	D3202 + D3059
15	Hose 6x12 length 450 mm. (rinse)	D3200
16	Hose ø 12mm length 810 mm. (water)	D3199
17	Pressure gauge tube	RL1010025
18	¾ connection for pressure gauge	RL1014018

04 WASHING ZONE RL-30



Pos.	Designation	Part no.
1	Stand pipe overflow (open)	RL1016118
2	Metal filter GS-18/19	RL0522119
3	Complete drain collector GS-18/19	RL1009257
4	O-ring	RL2510325
5	Hose elbow (pump-collector) GS-18/19	RL1008019
6	Hose clip 40/60	RL2501090
7	Hose	RL1012110
8	Heating element 2400W. – 208V.	RL2001405
9	O-ring	RL2514180
10	Clamping plate	RL5537004
11	Complete wash pump 208-240 V. 1Ph 60Hz. (1HP)	RL2011121

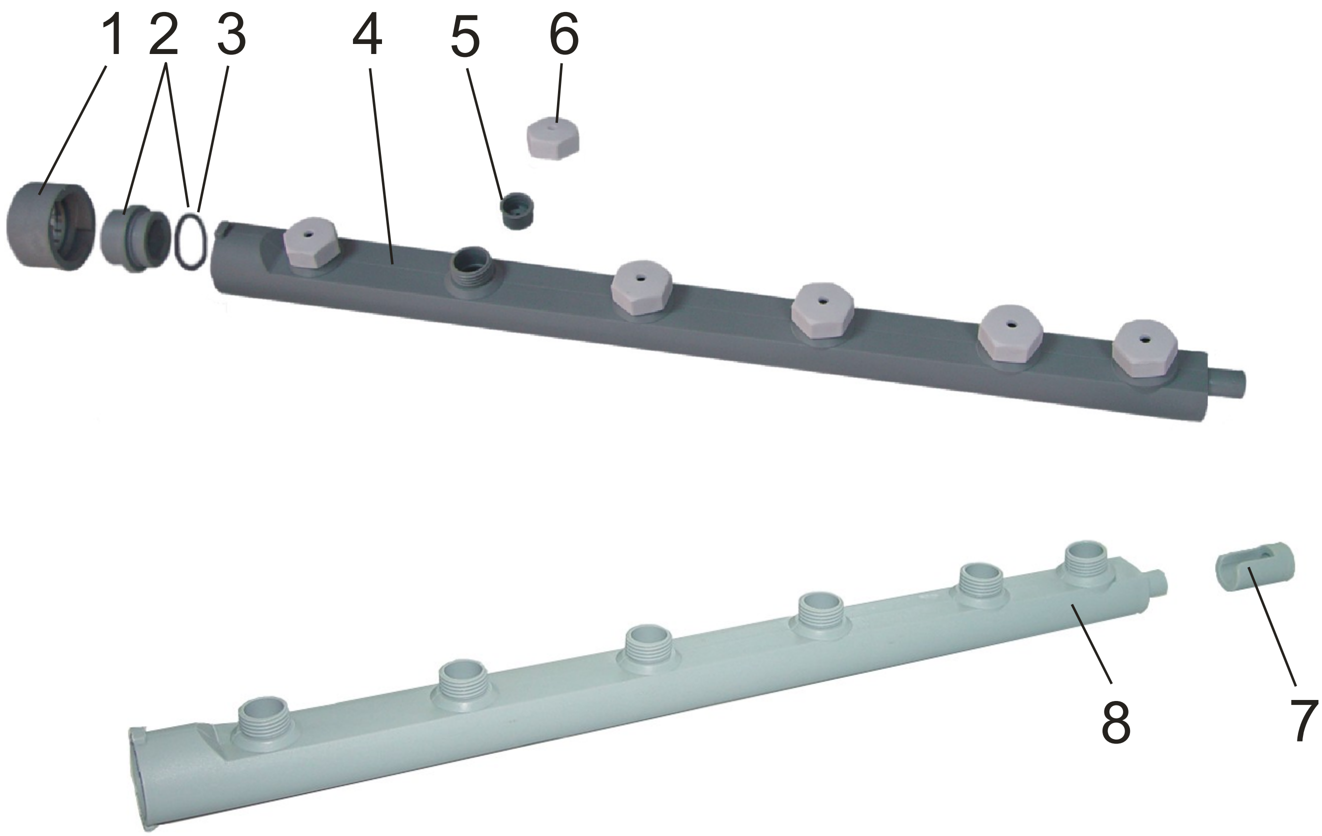
05 WASH DISTRIBUTOR RL-30



Pos.	Designation	Part no.
1	Complete wash arm	RL8040119
2	Lateral part manifold	RL4035070
3	Hose piece Ø50 L=140 mm.	RL1012514
X*	Complete wash manifold sup. (with ref. 1,2,3,5,10)	RL4035075
4	Hose piece Ø48 L=365 mm.	RL1012535
5	Hose clip 40-60	RL2501090
6	Coger wash manifold	RL4035072
7	Pump hose piece	RL1012104
Y*	Complete wash manifold inf. (with ref. 2,5,9,6)	RL4035076
8	Motor tipo 4219U2160 208-240V. 1 PH 60 HZ	RL2011121
11	Hose piece Ø48 L=75 mm.	RL1012120
12	Central part manifold	RL4035071

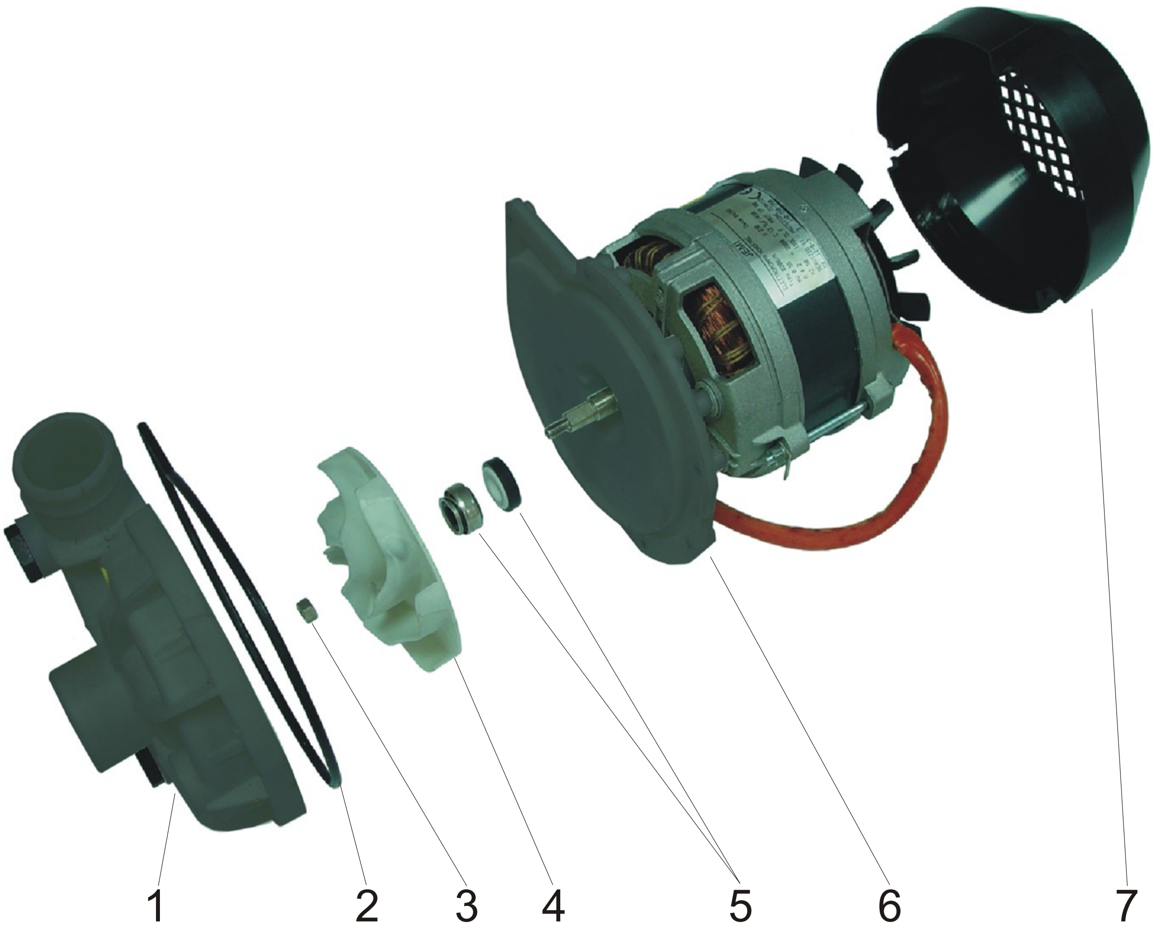
Modifications: Added pos 11,12
Eliminated pos 9,10

06 WASH ARM RL-30



Pos.	Designation	Part no.
1	Lock ring	RL4050120
2	Locking nut + o-ring 28x33x2	RL4050119
3	O-ring 28x33x2	RL2514090
4	Wash arm complete	RL8040119
5	Propeller for nozzle	RL4032119
6	Nozzle ∅5mm (white color)	RL4032122
7	Guide support for wash arm	RL4080183
8	Wash arm (without 5 and 6)	RL4028119

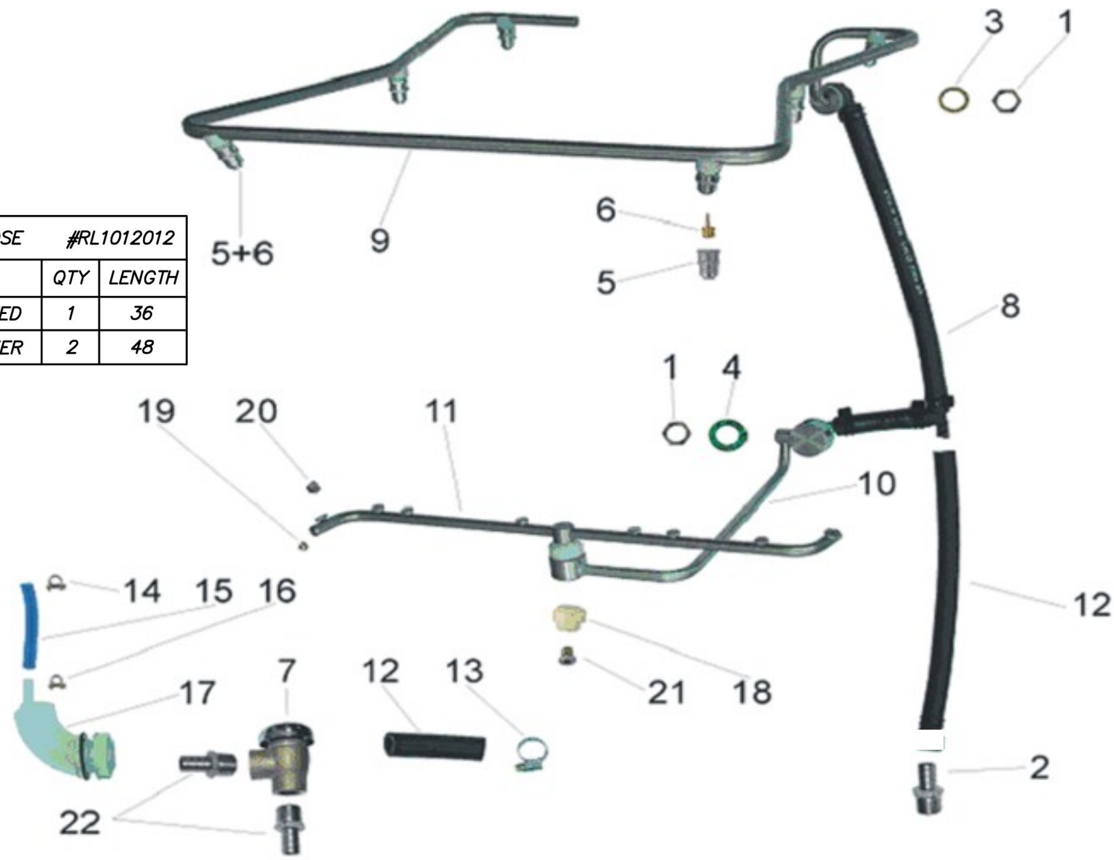
07 WASHING PUMP RL-30



Pos.	Designation	Part no.
1	Pump housing	RL4032118
2	O-ring	RL2516118
3	Nut M-6 I for pump shaft	RL1541016
4	Impeller for pump 60 Hz.	RL4042318
5	Seating ring / motor shaft seal	RL2041003
6	Wash pump	RL4037118
7	Fan cover	RL0842121
X	Complete wash puma (208-240, 1PH, 60 HZ, 1 HP)	RL2011121

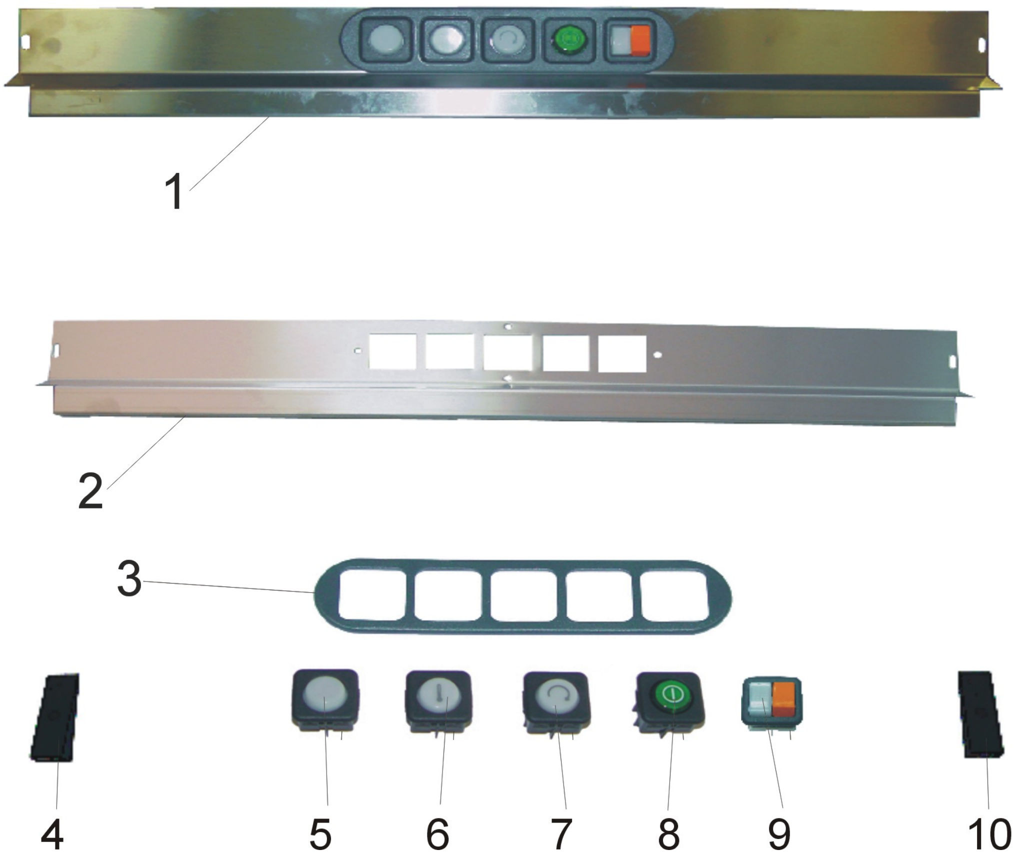
08 RINSING RL-30

POS. 12	HOSE	#RL1012012
USE	QTY	LENGTH
FINAL RINSE FEED	1	36
VACUUM BREAKER	2	48



Pos.	Designation	Part no.
1	Locking nut ½"	RL1525201
2	Outlet boiler fitting (stainless steel)3/8"	RL0845090
3	O-ring 20 x 2.5	RL1514081
4	Seal 35x22x2	RL2511121
5	Spray jet cap	RL0843007
6	Spray jet swirl	RL0832006
7	Atmospheric Vacuum Breaker	RL1009282
8	Hose and fitting for rinse manifold	RL1012719
9	Rinse manifold	RL0817120
10	Revolving rinse arm support	RL0840119
11	Complete revolving arm	RL0807109
12	Hose Ø 12 mm.	RL1012012
13	Hose clip 12-22	RL2501008
14	Hose clip 9 mm.	RL2501002
15	Hose PVC 5x9 mm. blue	RL1010202
16	Hose clip 9,5-10 mm.	RL2501003
17	Air chamber	RL4055001
18	Plastic revolving arm bush (white)	RL4047002
19	Revolving arm end screw	RL1515609
20	Flat set nozzle	RL0841040
21	Fastening screw for revolving arm	RL1515608
22	Rinse hose fitting	RL1014019

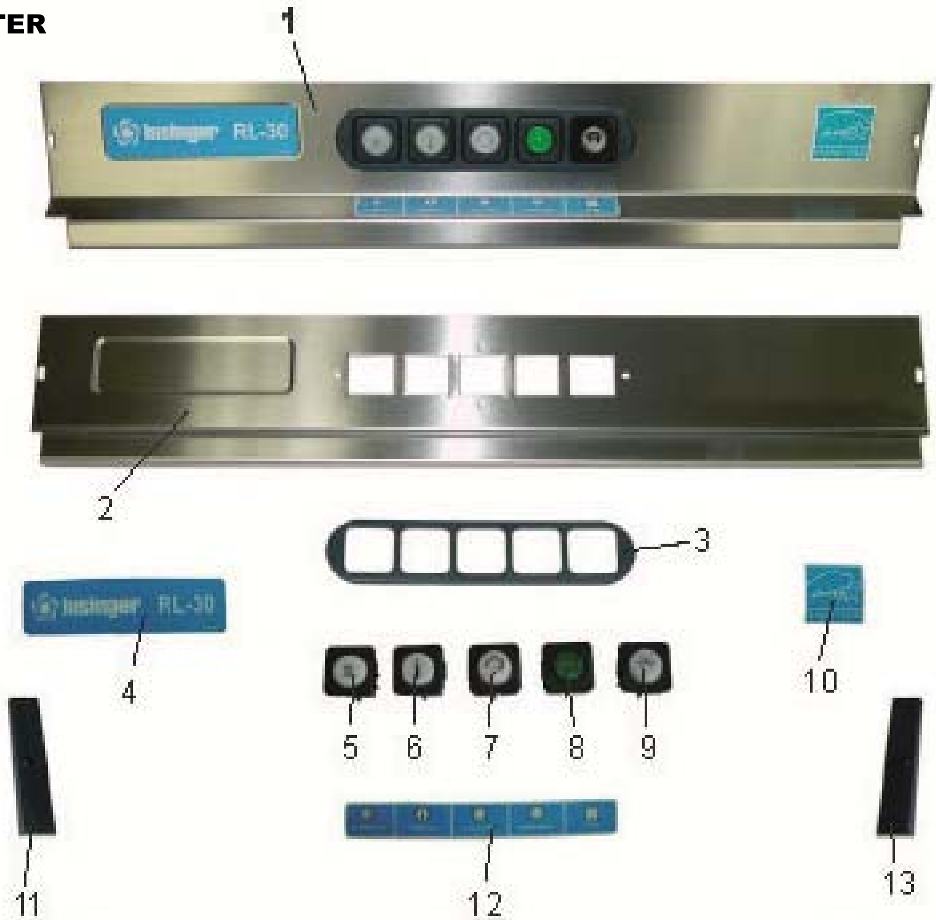
10 CONTROL PANEL RL-30



Pos.	Designation	Part no.
1	Complete control panel GS-18 RL-30	RL1420228
2	Control panel GS-18 RL-30	RL0504028
3	Pilot lamps frame	RL4030019
4	Frontal panel embellish cover left side	RL4032507
5	Switch DELIME	RL2002051
6	Temperature pilot lamp	RL2014032
7	Wash cycle push button	RL2003049
8	On-off switch	RL2002048
9	Drain pump push button	RL2003046
10	Frontal panel embellish cover right side	RL4032508

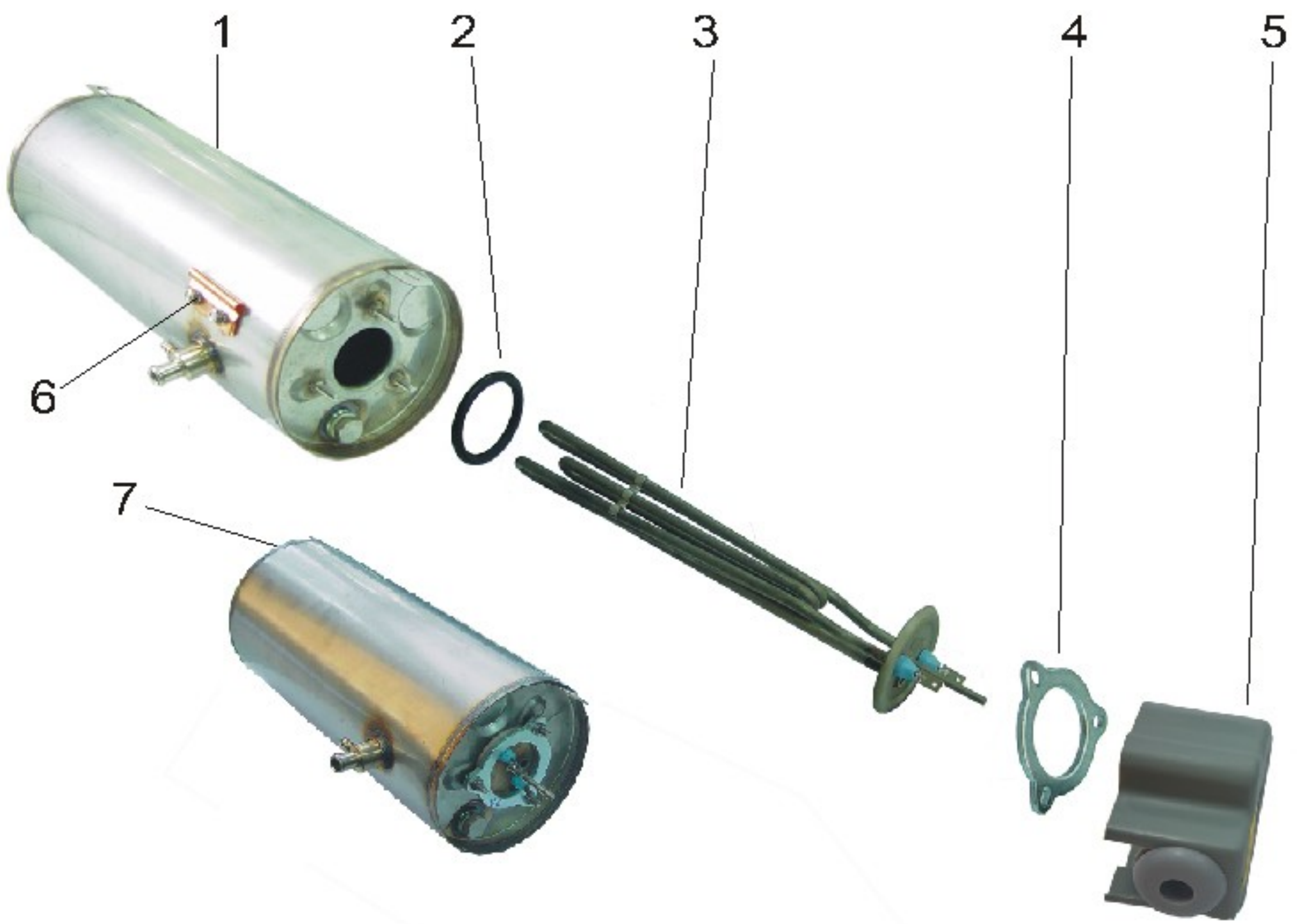
10 CONTROL PANEL RL-30

FOR UNITS AFTER SERIAL #87768



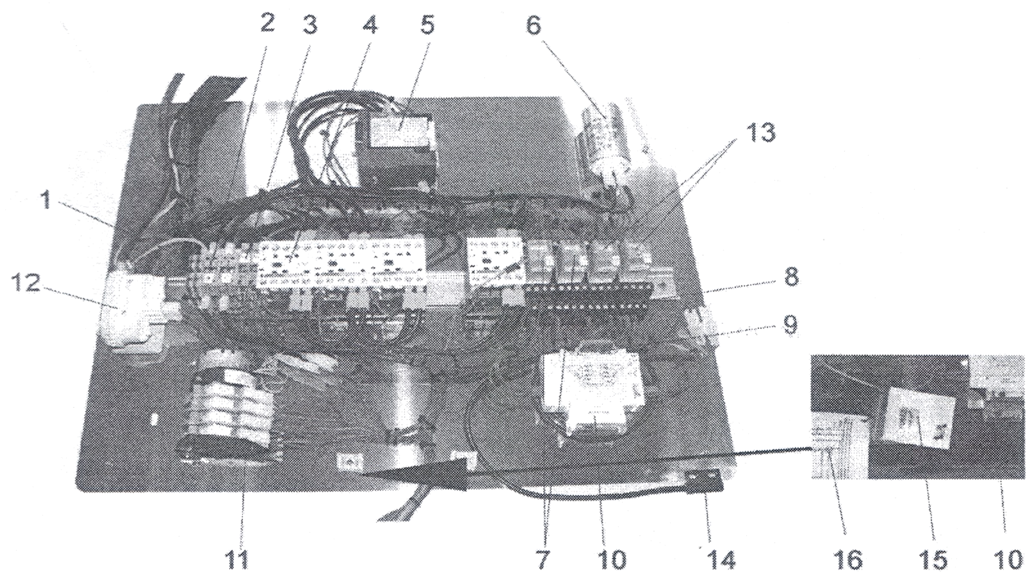
Pos.	Designation	Part no.
1	Complete control panel RL-30 570 x 105 mm	RL1420237
2	Control panel RL-30 570 x 105 mm	RL0504037
3	Pilot lamps frame	RL4030019
4 Insing	er label	RL3007030
5 Switch	DELIME	RL2002051
6 Tempe	rature pilot lamp	RL2014032
7	Wash cycle push button	RL2003049
8 On	-off switch	RL2002048
9	Drain pump push button	RL2003046
10	Energy Star label	RL3007031
11	Frontal panel embellish cover left side	RL4032519
12	Control panel label	RL3007032
13	Frontal panel embellish cover right side	RL4032520

09 BOILER RL-30



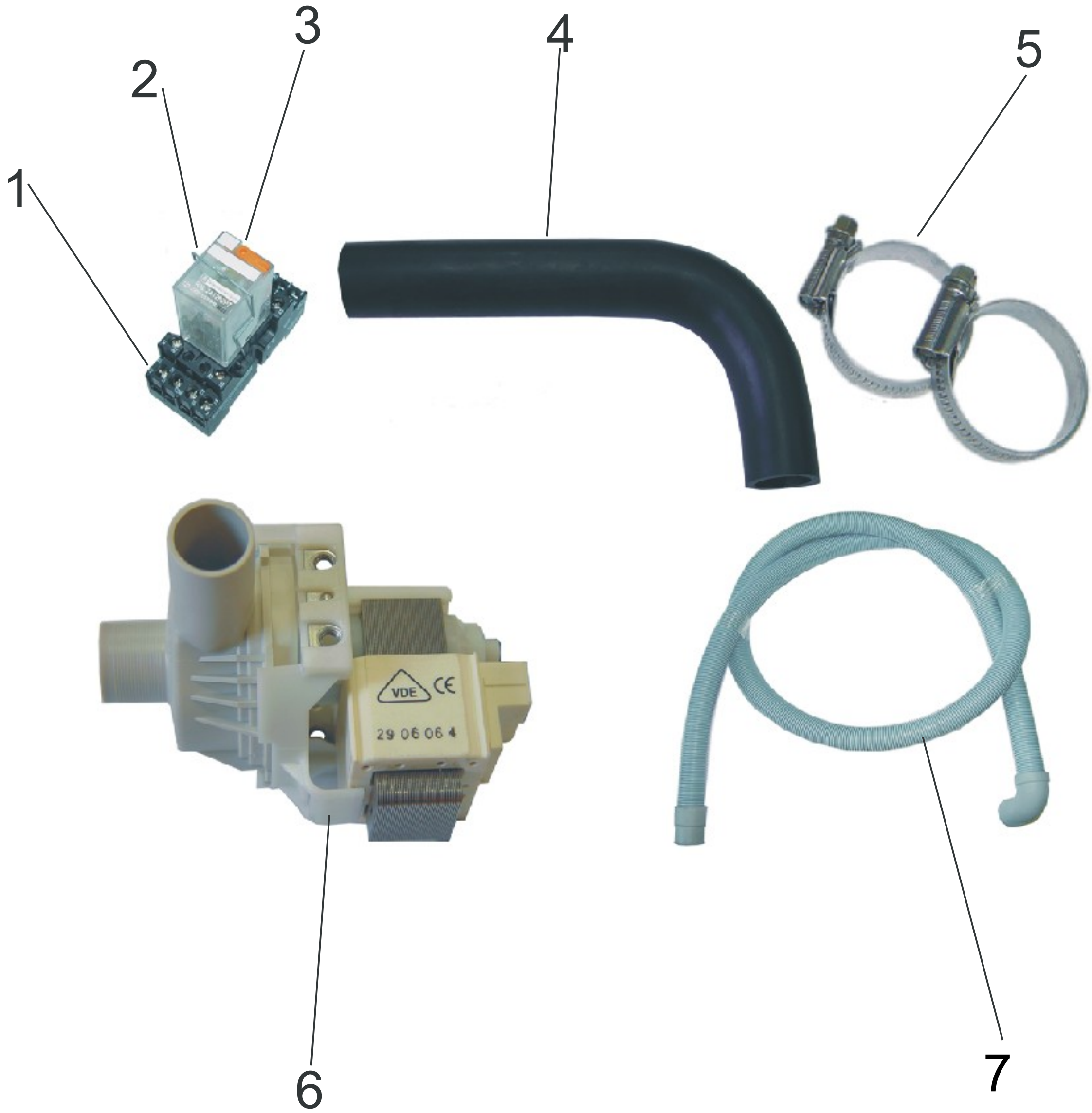
Pos.	Designation	Part no.
1	Thermostat fixing	RL0712001
2	Boiler	RL0502025
3	O-ring	RL2514180
4	Heating element single phase 2,6-3,45KW. / 208-240V.	RL2001402
5	Clamping plate	RL5537005
6	Heating element cap	RL1420090
7	Boiler with heating element	RL1405119

11 ELECTRICAL PANEL RL-30



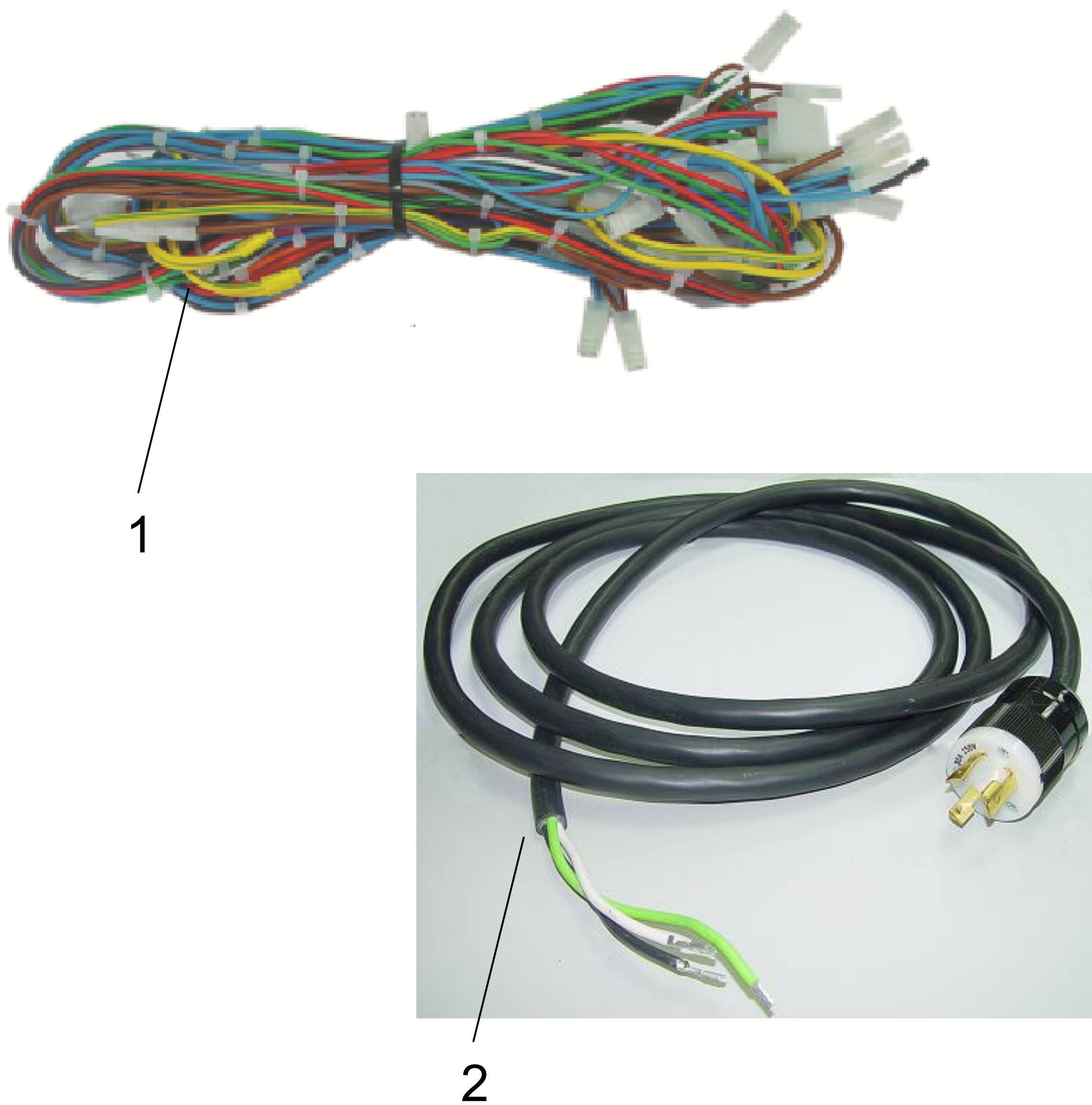
Pos.	Designation	Part no.
1	Herat terminal E-165113.16	RL2020015
2	Block 4 faston E-115191.03	RL2021002
3	Fuse holder block E-115622.22	RL2021003
4	Contactor 230V. * LC1K0910M7	RL2008321
5	Thermal relay LR2K0314 5,5-8A	RL2022638
6	Condenser 16µF	RL2013019
7	Feed relay 230V. 50-60 Hz. RLX2A 12A. 250V.	RL2054010
8	Feed relay base.	RL2054084
9	End dock E-1030002.26	RL2051085
10	Timing device 8 A/ 250V. 50-60 Hz.	RL2054101
11	Timer 230V. 50-60 Hz.	RL2005056
12	Level switch	RL2007011
13	Feed relay 230V. 50-60 Hz . 4NANC 12A. 250V.	RL2054083
14	Door magnetic micro switch	RL2109122
15	Bag fuses spare part (x2)	RL2021003
16	Wiring diagram	RL6016220

12 DRAIN PUMP RL-30



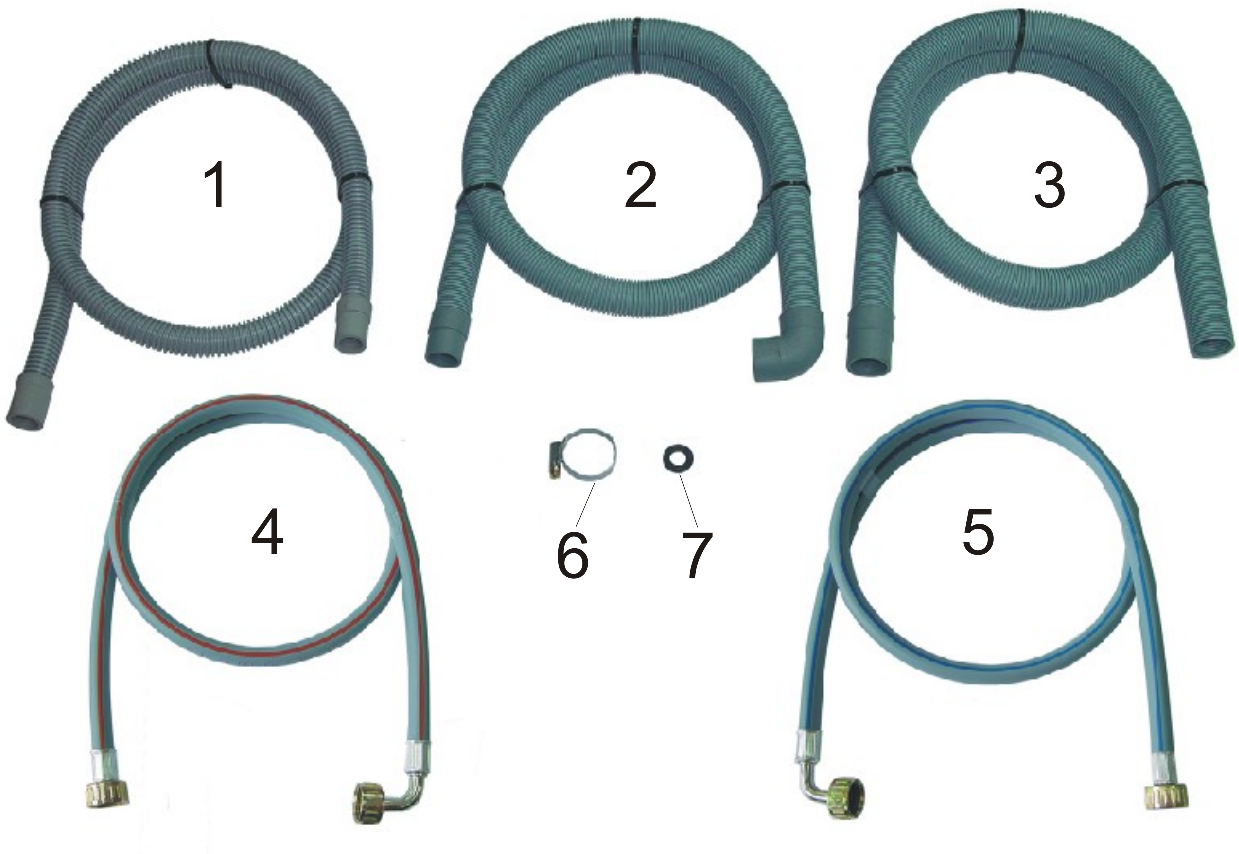
Pos.	Designation	Part no.
1	Feed relay base	RL2054084
2	Feed relay 230V. 50-60 Hz. RLX2A 12A. 250V.	RL2054010
3	Clip for fixing relay	RL2054085
4	Hose elbow	RL1008034
5	Hose clip 25-40	RL2501048
6	Drain pump 200-240 V 50-60 Hz.	RL2030018
7	Drain hose ∅20 L=1530 mm.	RL1010294

13 ELECTRICAL SYSTEM RL-30

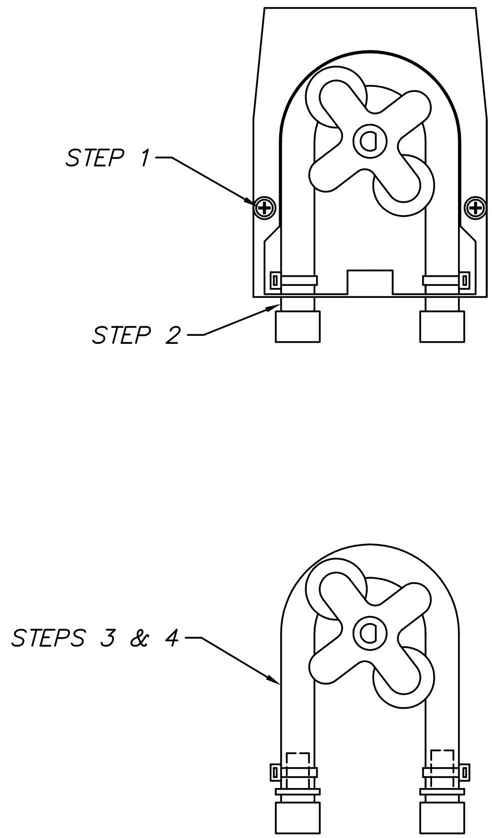


Pos.	Designation	Part no.
1	Single phase electric installation	2026118
2	Single phase electric current input	2026119

14 ENTRANCE AND EXIT WATER HOSE RL-30



Pos.	Designation	Part no.
1	Drain hose empty pump	NOT USED
2	Drain elbow hose GS-18* RL-30	RL1010294
3	Drain hose GS-18* RL-30	RL1010291
4	Inlet water hose ¾ temperatura esp.	RL1012106
5	Inlet water hose ¾	RL1012105
6	Hose clip 25-40	RL2501047
7	Hose ¾	RL2510001

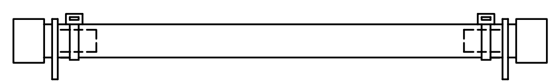


STEP 1: REMOVE (2) #4 x 1/4" LONG MACHINE SCREW & REMOVE CLEAR FRONT COVER.

STEP 2: PULL TUBING CONNECTORS, TUBING & SPIDER WHEEL ASSEMBLY STRAIGHT UP TO REMOVE FROM PUMP.

STEP 3: WRAP NEW TUBE ASSEMBLY AROUND SPIDER WHEEL ASSEMBLY. THE TUBE IS COATED WITH GREASE. DO NOT WIPE OFF.

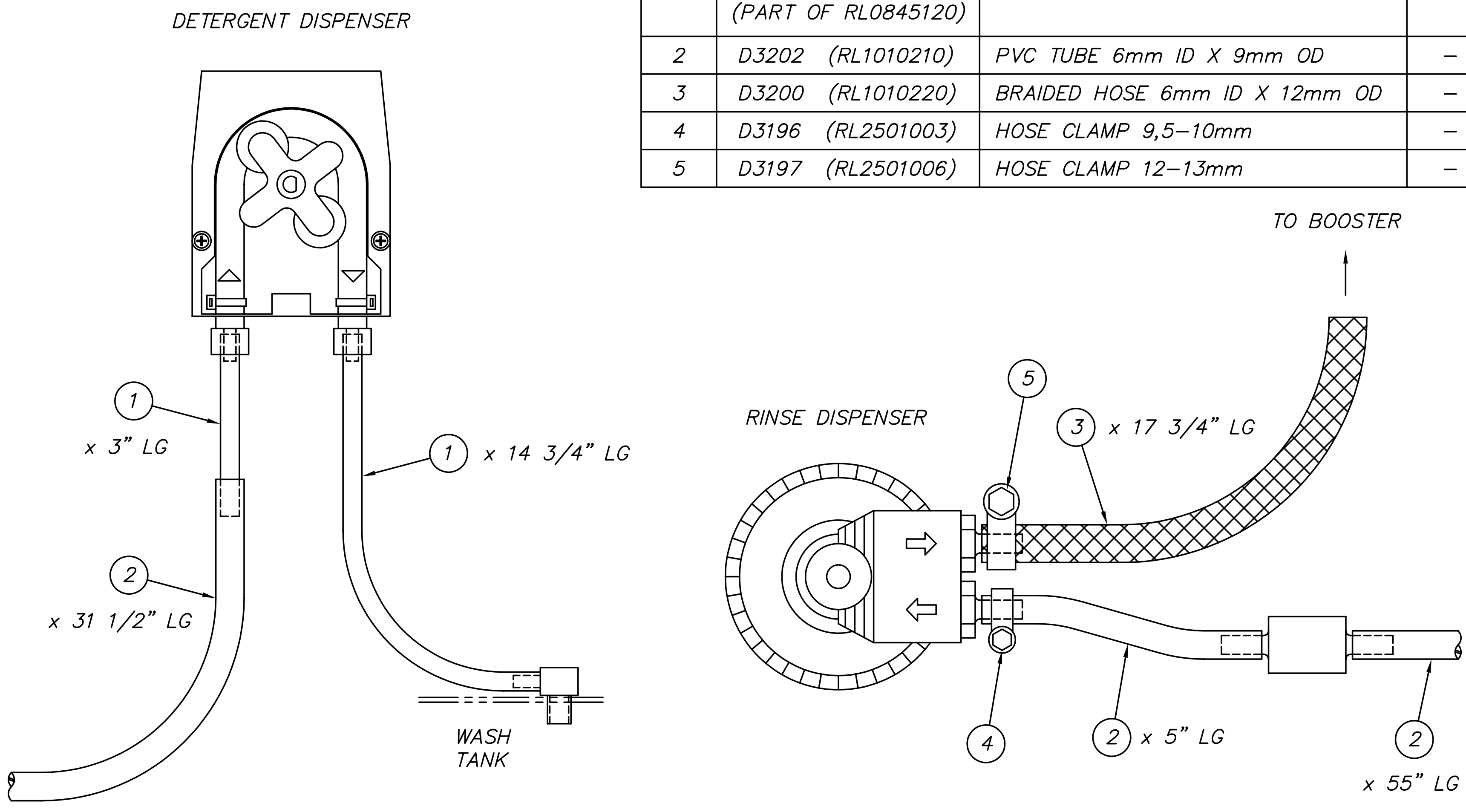
STEP 4: REPLACE ASSEMBLY IN PUMP. ALIGN BLACK TUBING CONNECTORS IN SLOTS & ALIGN FLAT ON SPIDER WHEEL ASSEMBLY WITH FLAT ON MOTOR SHAFT. PUSH STRAIGHT DOWN. REPLACE FRONT COVER.



D3195 HOSE ASSEMBLY COATED WITH SILICON GREASE – 1 REQ'D

REV	ECN NO	DATE	TOLERANCES	TITLE		
FILE: PARTS\1554–12			FRACTIONS ±1/64 DECIMALS .XXX ± .005 .XX ± .01 ANGLES ±1/2° UNLESS OTHERWISE SPECIFIED	REPLACEMENT HOSE KIT SEKO DETERGENT PUMP	NEXT ASSY RL2031080 REQ'D 1	DWG. NO. 1554–12
				MAT'L NOTED	SCALE 1=2	USED ON RL–30
				Insinger	Philadelphia, PA 19135 (215) 624–4800 FAX (215) 624–6966	DRWN/DATE CES 4.21.10

ITEM	PART NO.	DESCRIPTION	QTY.
1	D3059 (PART OF RL0845120)	PVC TUBE 4mm ID X 6mm OD	–
2	D3202 (RL1010210)	PVC TUBE 6mm ID X 9mm OD	–
3	D3200 (RL1010220)	BRAIDED HOSE 6mm ID X 12mm OD	–
4	D3196 (RL2501003)	HOSE CLAMP 9,5–10mm	–
5	D3197 (RL2501006)	HOSE CLAMP 12–13mm	–



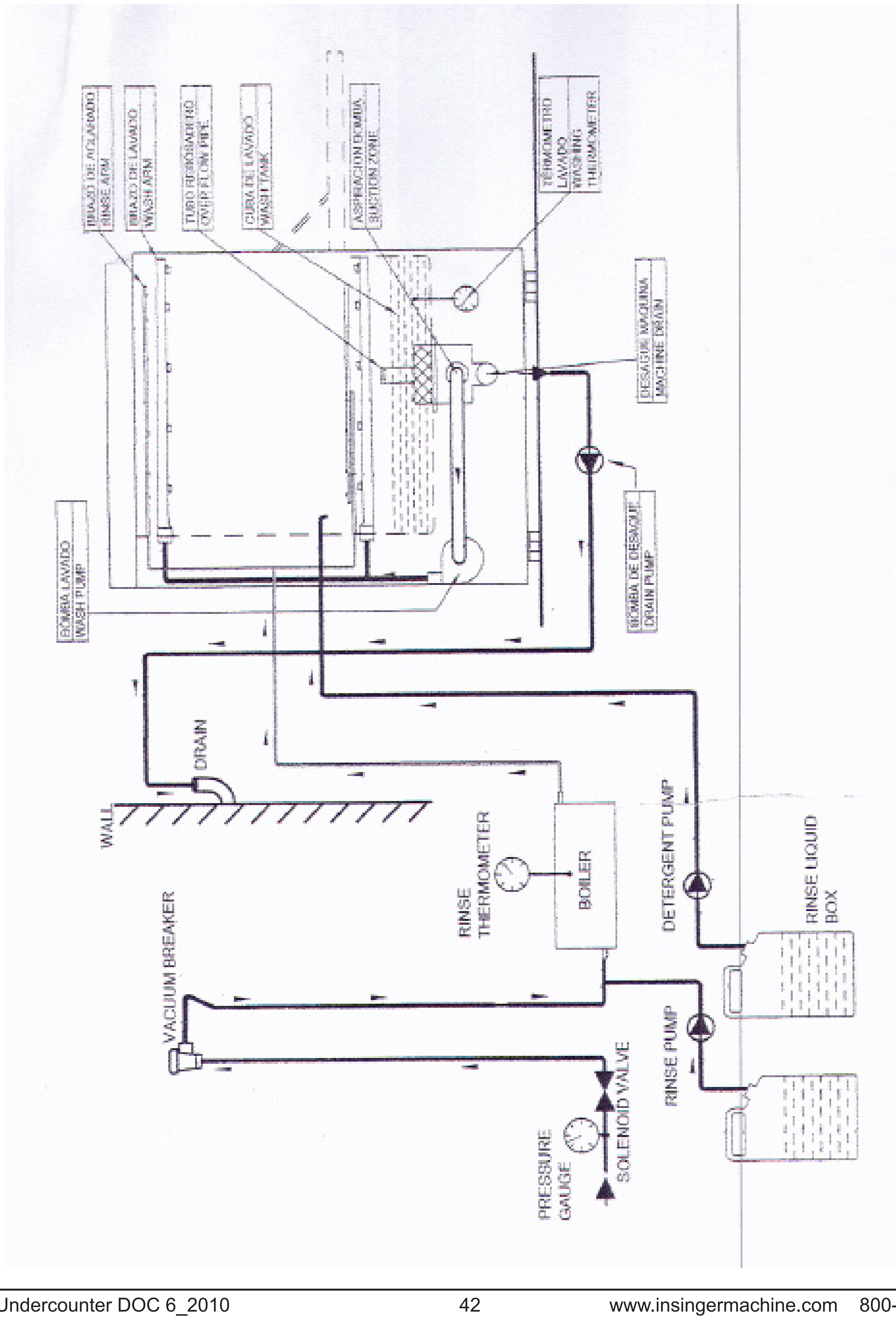
NOTE: 5mm X 8mm GS–302 TUBE CAN BE FORCED FITTED, BUT CONNECTION TO DETERGENT DISPENSER WILL BE IMPROPER.

REV | ECN NO | DATE
FILE: PARTS\1554–13

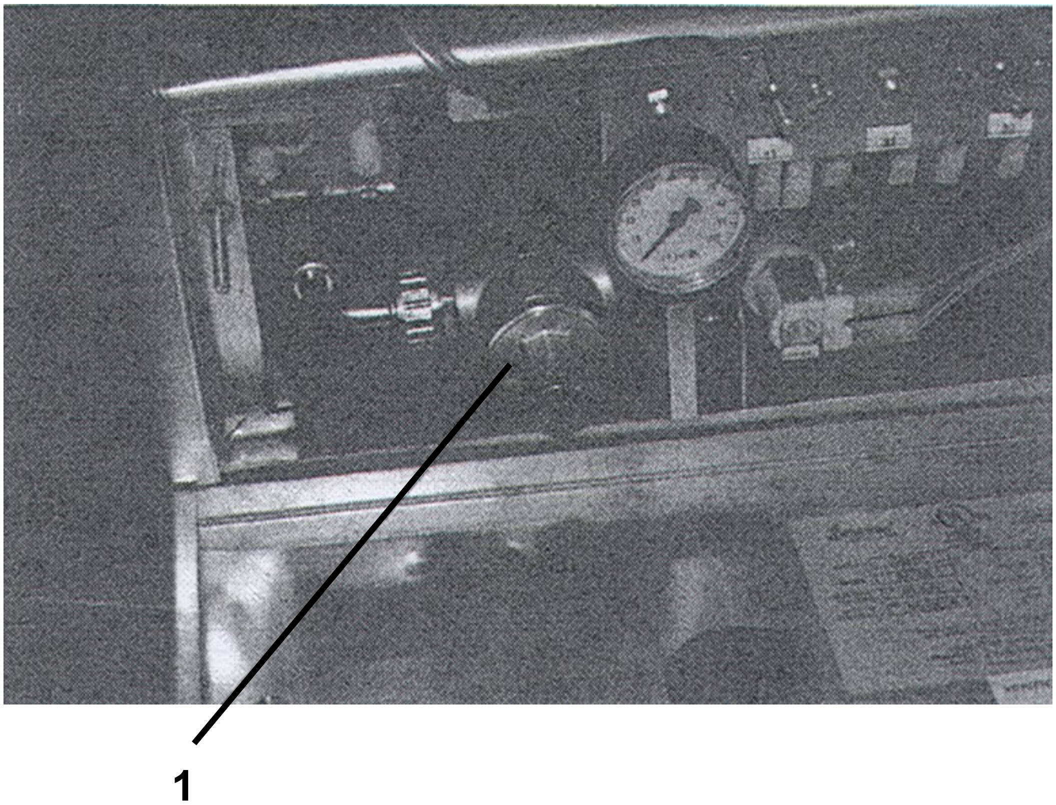
TOLERANCES
FRACTIONS ±1/64
DECIMALS
.XXX ± .005
.XX ± .01
ANGLES ±1/2°
UNLESS OTHERWISE SPECIFIED

TITLE: DETERGENT & RINSE HOSE CONNECTION DIAGRAM
MAT'L: NOTED
NEXT ASSY: –
REQ'D: –
SCALE: 1=2
DWG. NO.: 1554–13
USED ON: RL–30
DRWN/DATE: CES 5.4.10

Insinger
Philadelphia, PA 19135
(215) 624–4800
FAX (215) 624–6966


BRAZO DE ACLARADO
RINSE ARM
BRAZO DE LAVADO
WASH ARM
TUBO REBOSADERO
OVERFLOW PIPE
CUBA DE LAVADO
WASH TANK
ASPIRACION BOMBA
SUCTION ZONE
TERMOMETRO
LAVADO
WASHING
THERMOMETER
DESAGUE MAQUINA
MACHINE DRAIN
BOMBA DE DESAGUE
DRAIN PUMP
BOMBA LAVADO
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RINSE LIQUID
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PRESSURE
GAUGE

11 Pressure Regulator Water Inlet RL-30



Pos.	Designation	Part no.
1	Pressure regulator wáter inlet	RL1009220

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